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ABSTRACT

In the early 1990s, the Finnish government embarked on a strategy to remold Finland into a knowledge society. A key element in this strategy was to raise the knowledge and skill levels of the population by doubling higher education enrollments by the end of the century. Recognizing that it would be neither affordable nor desirable to double traditional university enrollments, the government created a new sector of higher education with a different content, degree structure, and governance, the polytechnics ("Ammattikorkeakolut"). Findings from this study, conducted by a team of experts using a variety of data sources, suggest that the strategy is likely to be successful. The polytechnic sector is highly regarded and currently enrolls three-fifths of students entering higher education. The examiners raise some issues related to fees and examine the strategies for internationalization of higher education. Issues of governance and accountability are explored, and some suggestions are offered to strengthen the new system. (Contains 28 tables, 27 figures, and 38 references.) (SLD)

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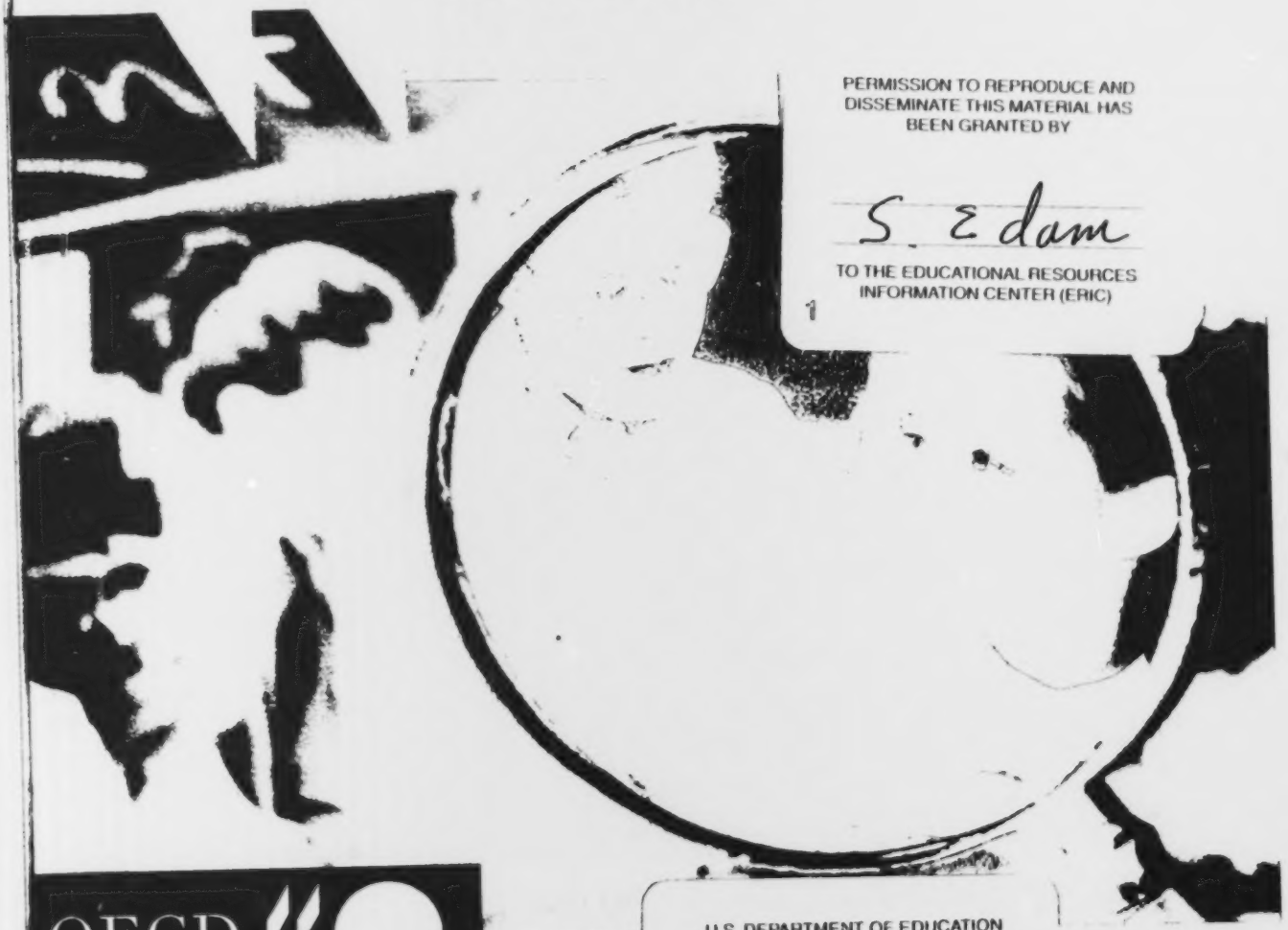

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Reviews of National Policies for Education

Polytechnic Education in Finland

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Foreword

After a decade of experience with the Ammattikorkeakoulut, the system of polytechnic education in Finland, the Ministry of Education asked the OECD to assemble a team of independent experts to review the results to date and offer advice on what might be done to improve the system. The Secretariat organised a review within the framework of the OECD's education policy reviews. In 2001 the Secretariat, in consultation with the Finnish authorities, assembled a team of examiners to visit Finland and assess the new system. The team was chaired by Professor John Pratt of the University of East London, in the United Kingdom. Other members were Per Olaf Aamodt of the Norwegian Institute for Studies of Research in Higher Education (Norway), Peter Maassen of the University of Twente (Netherlands) and the University of Oslo (Norway) and Joan Wills of the Institute for Educational Leadership (United States). Abrar Hasan and Gregory Wurzburg of the Secretariat accompanied the team. Before the team's visit to Finland, the Finnish authorities prepared a background report to provide the examiners with information on the historical, cultural, social, economic, institutional and policy contexts within which the system of polytechnics was established and has evolved in Finland. The team visited Finland in October 2001 to carry out interviews and gather further facts and solicit views on goals and objectives of the Ammattikorkeakoulut, results of the first few years of experience, and thoughts on how the system should evolve in the future. The examiners prepared a report with assistance of Gregory Wurzburg of the Secretariat. It is based on the background report prepared by the Finnish authorities, interviews and meetings that the review team conducted during its visit to Finland, additional material furnished by interviewees after the visit, and material provided by the Secretariat. An initial draft of the examiners' report was reviewed by the Finnish authorities early in 2002. A final draft was discussed with the Finnish authorities in a Special Session of the OECD Education Committee that was held in Helsinki on 4 June 2002.

This report is the result of the inquiry. It is published on the responsibility of the Secretary-General of the OECD.

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PART I

Background Report

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Introduction

Polytechnics form a new non-university sector in Finnish higher education. The polytechnics were instituted during a development process which took all of the 1990s, with the aim of raising the level and quality of Finnish education and training. It was seen to be desirable to offer young people another high-standard, more practically and vocationally oriented track in higher education. The creation of the polytechnic sector also meant a rapid increase in the provision of higher education. Since 2000, all polytechnics have operated on a permanent basis.

The future of Finland depends on knowledge, the ability to utilise knowledge and the capacity for new innovations. Higher education and research play an important part in the national innovation system. The Finnish Government has requested OECD to review its polytechnic education. The findings will be used to further develop the polytechnic system and to revise legislation.

A high-standard international evaluation is especially needed to find a response to the following questions:

1. The role of polytechnics in the higher education system:
   - Is the polytechnic role in higher education instruction and R&D clear, distinct, functional, and useful?
   - Is the role sufficiently complementary to that of universities?
   - Have the polytechnics found their own profile as higher education institutes?
   - In what ways do international developments in degree structures clarify the role of polytechnics in Finnish higher education? In what ways do they confuse the role of polytechnics?
   - How has the rapid increase in provision of higher education in Finland clarified the role of polytechnics? In what ways has it confused their role?
2. Outcome of the polytechnic reform:
   - How well have the reforms succeeded in raising the level and quality of courses, programmes, and instruction?
   - What is the effectiveness of the polytechnic network as a whole?

- What impact has the reform had on the attractiveness of vocational and technical education?

3. The role of polytechnics in the community, regions, and the world:
   - How effective a role have polytechnics played in promoting community and regional development and innovation?
   - How effective has the interaction been between polytechnics and employers, SMEs in particular?
   - What role have polytechnics played in R&D; how might that be strengthened?
   - What role have polytechnics played in international co-operation, particularly with regard to receiving students from outside Finland, and sending polytechnic students to study in other countries?
4. Steering and financing of the polytechnics:
   - Are the governance and finance systems of the polytechnics well suited to the roles the polytechnics are intended to play in higher education, and in society at large?

The Finnish background report describes the creation, present state, and future challenges and aims of the polytechnic sector and the lines of its development. The report has been divided into seven chapters. Chapter 1 briefly describes Finnish history, society, economy and labour market, and Chapter 2 the Finnish education system and its administration and the aims and priorities of higher education policy. Chapter 3 discusses the background to the polytechnic reform and the way it was implemented. Chapters 4 to 6 deal with the polytechnic system, the present situation and the role of polytechnics in regional development. The last chapter outlines future challenges from both an international and a national perspective, as well as development needs in Finnish education.

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PART I

Chapter 1

Finland in Brief

Abstract. *Chapter 1 provides an overview of Finland, looking at its history, population, economy, labour market, and its place in the world and the information society.*

Population: approximately 5.2 million.
Capital: Helsinki (population approximately 550 000).
Total area: 338 000 km^2.
Population density: 17 per sq. km.
Official languages: Finnish (93%), Swedish (6%) and Sàmi in the Sàmi areas of Lapland.
Religion: Evangelical-Lutheran (86%), Orthodox (1%), other (12%).
Principal business sectors (percentage of GDP): services (60%), industry and construction (35%), agriculture and forestry (5%).
Principal trading partners: Germany, Sweden, UK, USA, Russia.
Gross domestic product: EUR 122 billion, EUR 20 500 per capita.
Population in the 25-64 age group: 2.8 million.
Labour force: 2.6 million.
Proportion of population with post-comprehensive education: 57%.
Information technology in households: mobile phone (79%), home computer (44%), CD-ROM (35%), Internet connection (26%).

1.1. History

The first inhabitants settled in Finland after the last Ice Age, about 10 000 years ago. Finland became part of Sweden during the time of the Crusades. The period of Swedish power lasted for over 600 years and Finland's social organisation and legislation largely derive from that time. King Gustavus Vasa of Sweden created a system of centralised government for Finland in the early 16th century and imposed taxation on land ownership. Religious reformation took place at the same time and this marked the first step in the creation of a national language and literature. Finland's first university was founded in Turku in 1640.

In 1809, Finland became an autonomous Grand Duchy of the Russian Empire. During the period of autonomy, Finland's position was fairly independent. Finland had its own Diet based on the Four Estates and its own legislation inherited from the days of Swedish power. Helsinki became capital

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of the Grand Duchy and the university was transferred from Turku to Helsinki in 1828.

Mid-way through the 19th century, social, educational and economic development in Finland began in earnest. A sense of Finnish nationalism was aroused as well as a great interest in the Finnish language and Finnish national culture. The organisation of volunteers into various associations to shoulder certain social responsibilities, such as educating the children of the poor, marked the emergence of a civil society. Industrialisation in Finland began towards the end of the century, particularly with the sawmill and paper industries, which developed rapidly, and the growth of domestic transport connections.

The crucial event from the point of view of the country's political system was the parliamentary reform of 1906, when a single-chamber system of parliamentary representation was created. General and universal suffrage for all, including women, came into force, and the majority of the political parties to which the representatives in the first single-chamber parliament belonged, still exist today.

Finland became independent in 1917, but was driven into civil war the following year, with the nation divided into Reds and Whites. Russian soldiers were expelled from the country at the same time. The events of 1918 claimed the lives of over 30 000 people, but Finland became a democratic republic with a parliamentary form of government.

Between the two World Wars, the crucial question for Finland was whether it could maintain its independent status. The world-wide recession came to an end in the 1930s and Finland began to prosper particularly on the basis of the growing forest industry and its exports. With industrialisation the population moved to the towns and became urbanised. Social conditions improved through a number of measures, including the enactment of legislation on compulsory education in 1921.

In autumn 1939, Finland got into war when attacked by the Soviet Union, thus becoming involved in the Second World War. The Winter War with the Soviet Union lasted until March 1940 and, when it ended, Finland was forced to cede considerable areas of territory to the USSR, but was able to preserve its independence and prevent the country from being occupied. Finland went to war with the USSR again in 1941, the year Germany attacked the Soviet Union, to try and regain the territory it had lost. Under a separate peace agreement between Finland and the Soviet Union signed in 1944, Finland was obliged to make further territorial concessions and pay war reparations to the USSR.

In the immediate post-war years, more than 400 000 displaced persons from the ceded territories were resettled in other parts of Finland. In addition to that, the livelihoods of 90 000 war widows and orphans, and almost

60 000 invalid ex-servicemen had to be secured. The war reparations were finally paid off in 1952, they had the effect of vigorously building up the Finnish metal industry. In the first half of the 1950s, more than 90% of Finnish exports were still based on timber.

After the Second World War, Finland went through a period of great structural change, in which the formerly agrarian country switched over to being an industrial one. This brought with it heavy migration from the countryside to the towns and the population became more and more concentrated, especially in southern Finland. In the 1960s and 1970s many people emigrated from Finland, particularly to Sweden. Finland's most important source of economic growth was industry, which expanded exports especially after the EFTA agreement was signed in 1961. Sweden and the United Kingdom rose to become Finland's most important trading partners.

It was thought desirable to distribute growing prosperity evenly by creating a system of social security that included guaranteed health care for all at next to no cost. Educational equality was increased by establishing the same comprehensive education for all, free-of-charge. Finland, too, had become a country within the characteristic Nordic tradition of the rule of law, with good social security and a high standard of living.

In the decades following the Second World War, dramatic changes have taken place in Finland's international status and operating environment. In 1955, Finland joined the international community by becoming a member of both the United Nations and the Nordic Council. Finland also took part in the integration of Europe from the very beginning by becoming a member of EFTA, the European Free Trade Area, and entering into an agreement on free trade with the EEC, the European Economic Community, in 1973. Following a referendum, Finland joined the European Union in 1995. Membership of the EU has helped to make Finland more accessible and increased its co-operation with other countries.

Finland's economic development was characterised for decades by rapid growth coupled with a sensitivity to fluctuations in international trade cycles. In the early 1990s, Finland found itself in a period of deep recession, when the bubble of asset values financed by foreign borrowing burst, as it had done a little earlier in the neighbouring countries and as it did in Asia in the latter half of the decade. The situation was worsened by the fact that there was a decline in the trade cycle in Europe and Finland's trade with the Soviet Union collapsed when the Soviet Union broke up. Gross domestic product shrank about 10% altogether between 1991 and 1993. At the end of the 1980s, unemployment was less than 3% and there was a shortage of labour in a number of sectors. As a result of the depression, unemployment rose to a record level of 16.5% in 1994. Between 1992 and 1994, incomes of households fell by a total of 10.5% in real terms. The level of consumption that had preceded the recession was regained in 1997.

1.2. Finland today

1.2.1. *Population*

In Finland, about 5.2 million people live in an area of 338 000 square kilometres. The average population density is 17 persons per square kilometre. The population is concentrated in the southern parts of the country, especially the Helsinki metropolitan area where almost one million people live, around one-fifth of the population. Indeed, the population density in Uusimaa is over 200 persons per square kilometre, whereas in Lapland it is only 2. Some 64% of the Finnish population lives in built-up areas and there are six towns of more than 100 000 people.

Demographic changes in the regions indicate that population figures have been growing in the Uusimaa region and a few other major growth centres. Northern Finland and Eastern Finland particularly, are regions where the population figures have gone down. The concentration of the population is the result of waves of heavy migration; the most recent of which took place after the beginning of the 1990s. A new characteristic of the migratory flow of the 1990s is that many urban areas as well as rural areas have been faced with net emigration.

By and large the migration is from the countryside to the regional centres and from the regional centres to the principal growth centres. The typical migrant is a young adult, with 15- to 29-year-olds making up over half of all the movements between the regions. The Helsinki Metropolitan Area is far and away the most attractive area for young people, with a net population increase for those aged 20-24 of about 5% per annum in relation to the number of residents in that age group.

According to forecasts by Statistics Finland, the population of Finland will remain above 5 million until 2030, at least. The working-age population will still continue to grow as a proportion of the total population in the early years of the new millennium, but will then shrink rapidly. By 2030, about a quarter of the population will be over 65 (Table 1.1).

There are relatively few foreigners living in Finland, only about 1.6% of the total population, with the largest group coming from the former Soviet Union. Approximately one-fifth of Finland's foreign residents are from the European Union.

In 2000, a total of 16 800 people moved to Finland, 5 400 from the EU, 4 700 from the Nordic countries and 6 700 from elsewhere. Of those who moved to Finland in 1998, some 2 400 had a higher educational qualification. The majority of these, around 80%, came from another European country and 22% from Sweden alone. Some 1 000 fewer people with higher education came to Finland then left, so Finland experienced a net loss of highly trained people.

Table 1.1. **Population by age group, end 1999**

Age	Males	Females	Total
0-4	151 759	145 763	297 522
5-9	167 831	161 544	329 375
10-14	161 552	154 552	316 104
15-19	169 996	162 210	332 206
20-24	167 606	160 460	328 066
25-29	155 590	148 858	304 448
30-34	182 321	175 244	357 565
35-39	194 200	186 739	380 939
40-44	196 273	190 213	386 486
45-49	204 582	199 863	404 445
50-54	213 919	209 647	423 566
55-59	140 513	143 681	284 194
60-64	124 103	135 115	259 218
65-69	103 675	123 488	227 163
70-74	86 775	121 845	208 620
75-79	55 966	104 364	160 330
80-84	27 816	66 183	93 999
85-89	14 002	41 393	55 395
90-	4 547	17 114	21 661
Total	2 523 026	2 648 276	5 171 302

Source: Statistics Finland.

Finland's official languages are Finnish and Swedish. Some 93% of the population speak Finnish as their mother tongue and 6% Swedish. Although Swedish speakers are concentrated mainly in the coastal areas, Finnish and Swedish are on an equal footing throughout the country when dealing with governmental authorities.

The third native language in Finland is Sàmi, with 1 700 people (0.03% of the population) speaking it as their mother tongue. The Sàmi people live in the northernmost part of Finland, Lapland, and in their home districts they are entitled to public services in their own language.

There is religious freedom in Finland, which guarantees citizens the right to practice any religion, so long as it does not infringe the law and is not in breach of good manners. The Evangelical-Lutheran Church and the Orthodox Church have special status in Finland's religious community, as they have the right to levy taxes, for instance. The majority of the population (86%) belong to the Evangelical-Lutheran Church, and 1% to the Orthodox Church. Some 12% of the population do not belong to any religious group.

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1.2.2. Society

Finland is a republic, with a Parliament consisting of 200 members, elected every four years, which is the highest legislative organ. Besides legislation, it decides on the budget, supervises the Government and audits the administration.

Parliamentary representation 1999-2003:

Social Democratic Party	51
Centre Party	48
National Coalition Party	46
Left Alliance	20
Green League	11
Swedish People's Party	11
Christian League	10
Reform Group	1
True Finns	1
Other	1

The Government prepares laws and exercises the supreme executive authority. It can also issue decisions altering existing decrees. The Government must enjoy the confidence of Parliament. The present Government is made up of representatives of the Social Democratic Party, the National Coalition, the Left Alliance, the Green League and the Swedish People's Party.

The President of the Republic, elected by direct popular vote at 6-year intervals, is relatively independent of Parliament. Finland's foreign policy is led by the President in collaboration with the Government. The President submits bills to Parliament and ratifies legislation passed by Parliament. If the President refuses to ratify an act passed by Parliament, the act is consequently postponed. The President also issues decrees and is the Commander-in-Chief of the Defence Forces.

The administrative system operating under the highest Government organs consists of central government units, and regional and local government.

By tradition, central government is exercised through two channels in Finland: ministries and central agencies. Ministries are led by politically responsible ministers. Central agencies operate under the ministries. Thus there is a separate central agency called the National Board of Education operating under the Ministry of Education. Ministries steer the central agencies in general but do not interfere with their decisions in individual cases. Thus central agencies are relatively independent in their own sectors. Central agencies have played no role in the administration of higher education.

Regional government operates under central government, with Provincial State Offices handling general administrative duties. There are no elected organs in the six provinces. The Province of Åland is autonomous, its status being based on international agreements and the Act on the Autonomy of Åland. Åland's only official language is Swedish. A Provincial Legislative Assembly with limited legislative powers is elected to govern the province. Åland also has a Provincial State Office for general government.

Local government is in practice handled by municipalities, of which there were 448 at the beginning of 2001. Of these, 67 were urban, 70 densely populated and 311 rural communities. Every Finnish citizen is registered as a resident of a municipality.

Municipal government is traditionally based on the principle of autonomy. In recent years, the autonomous status of municipalities has expanded, with the aim of giving local people sufficient freedom to influence the municipality and its functions. A reform of municipal legislation in 1995 gave the municipalities a free hand to decide on their administrative structure, functions and distribution of power. Municipal autonomy is based on the idea of representational democracy. The highest decision-making organ is the council, elected every four years by direct popular vote. The highest executive power lies with a municipal board elected by the council.

It is the function of the municipalities to guide and provide services for their residents on the basis of law. Some of the most important statutory municipal functions are health care, comprehensive education, social services, the fire and rescue departments, environmental and waste management, and community planning and construction. As society has developed and changed, the functions of the municipalities have increased. Today, municipalities provide approximately two-thirds of all public services, and some 60% of their spending goes on training and education, health care and social services.

Each municipality has at least one education committee or a similar organ. Every municipality is required to provide basic education for all children living in the municipality or otherwise to ensure that all children of school age receive such education. The municipal education authorities may also provide upper secondary, vocational, polytechnic and adult education. Municipalities and joint municipal boards must, by law, evaluate their education and its effectiveness.

Municipalities may set up joint municipal boards between a number of municipalities by intermunicipal agreement approved by their respective councils. These joint municipal boards usually look after functions that are expensive to establish and maintain, and that call for a broad population basis. Usually, joint municipal boards are set up to provide health services and vocational and polytechnic education.

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The most significant income sources for municipalities are tax revenues, income transfers from the Government and various charges. The Government contributes to the financing of municipal functions through a system of subsidies set using various calculations. During the economic difficulties of the 1990s, the Government reduced its municipal subsidies substantially. The subsidies granted by the Government to municipalities are not tied to a certain function, which means the municipalities can decide how to allocate their funds to social and health care and education and culture, on the one hand, and other municipal functions, on the other.

1.2.3. *The economy*

The Finnish economy has grown rapidly in the past few years (Table 1.2). Between 1994 and 1998, GDP increased by an average of 5% a year. The post-recession upswing is due to a number of parallel factors. In the years of recession, stabilisation of economic policy was set as the basic principle and goal of economic policy. A decision was made to cut public spending in order to stop the continuing increase in government debt. Unparalleled structural change lay behind the rapid growth that followed the recession, and the output and exports of the electronics and electrical industry grew particularly vigorously.

Table 1.2. **GDP trend**

	1997	1998[1]	1999[1]	2000[1]	2001[1]
GDP at market price, EUR billion	106.9	116.3	121.7	130.4	137.5

1. Estimates.
Source: Ministry of Finance.

The success of the electronics industry side-by-side with the traditionally strong forest industry and metal and engineering industry sectors played a significant role in the diversification of Finland's production structure. The forest industry has always relied on processing domestic timber resources for the export market. There has been a shift of emphasis from mechanical wood processing to paper and pulp. Tighter competition and globalisation have had an impact on the forest industry: Finnish companies have expanded their operations abroad and merged to form larger units. The metal and engineering industry has grown recently, both in production and in its employment effect. The role of electronics has strengthened rapidly. Chemicals is Finland's third biggest industrial sector. The food industry used to be mostly domestic until recently, and Finnish agricultural products were used primarily by Finnish consumers, but since Finland's accession to the EU the situation has changed and the entire food sector is now involved in international competition. Product development has been the food industry's answer to the ever keener competitive situation.

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Industrial production has grown rapidly since the mid-1990s, and productivity has increased, too (Table 1.3). There is a positive relation between information technology investments and corporate productivity. Within companies, IT and communications technology have required organisational rearrangements.

Table 1.3. **Volume index for industrial production (1995 = 100)**

	All industry	Wood processing and paper	Electronics	Other metal engineering
1990	87.3	83.4	49.1	89.7
1991	79.7	78.1	44.2	75.6
1992	80.5	80.9	51.7	76.0
1993	84.8	89.1	62.9	77.4
1994	94.2	99.5	80.2	87.8
1995	100.0	100.0	100.0	100.0
1996	103.5	97.0	114.2	103.4
1997	113.2	110.9	136.7	111.3
1998	122.4	115.2	189.3	115.6
1999[1]	129.1	119.1	235.1	114.0
2000[1]	143.4	124.3	318.3	122.4

1. Estimates.
Source: Statistics Finland.

Deregulation of markets has proceeded rapidly. The basic goals of industrial policy include supporting entrepreneurship and promoting the transparency and functionality of the market. In practice, Finland has abolished all restrictions on foreign ownership, and competition policy is now in line with EU provisions. As a member of the European Union, Finland is part of the single market. EU membership has meant closer industrial connections with Europe, and with member States in particular.

Entrepreneurship expanded rapidly in the information sector in the 1990s, but the number of companies in this sector is still low. In 1998 the information sector comprised fewer than 15 000 companies, i.e. 6.5% of the total. On the other hand, every tenth employee works in information sector companies, and the proportion accounted for by net sales and payroll is still greater (Figure 1.1). Major companies are a common feature in the IT sector. The most important goods produced are radio and television sets and other equipment (such as mobile phones), where net sales have increased fivefold since 1993. The most important employer sector is service production, comprising data processing services and telecommunications. Some 10 000 new jobs were created here between 1996 and 1998.

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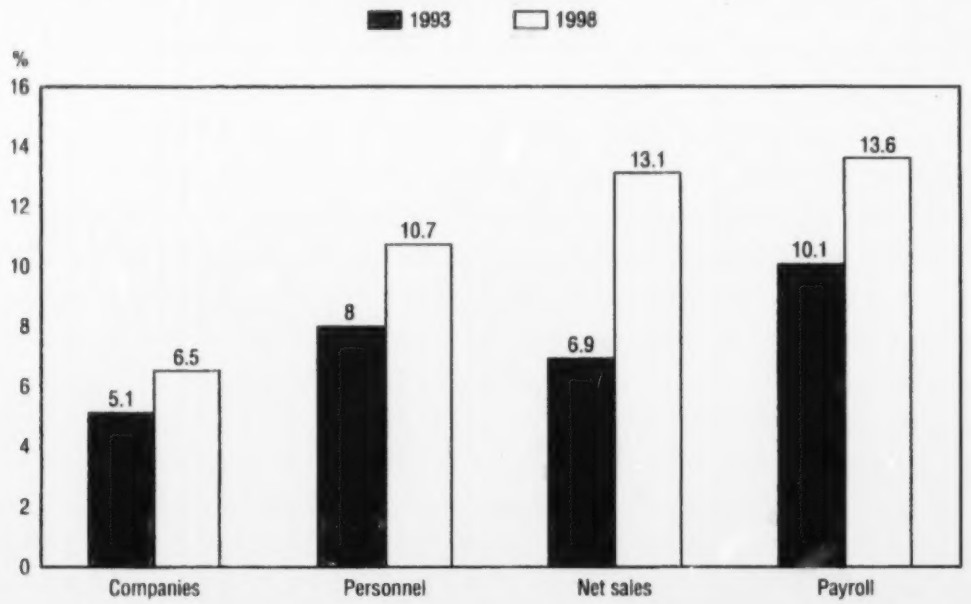
Operations in the information sector are concentrated geographically. More than half of the sector's personnel and net sales are accounted for by the Uusimaa region. Other regional concentration centres are Southwest Finland, the Tampere Region and the Oulu region in Northern Ostrobothnia. The number of segments in this sector increased in all regions from 1994 to 1998, and by approximately one-third at the national level.

Figure 1.1. **Proportion of companies accounted for by the IT sector in 1993 and 1998**



Source: Statistics Finland.

The process by which information and know-how became Finland's key resource is also reflected in the rapid increase in research and development spending. In 2000, according to preliminary data 3.3% of GDP went into R&D. The communications sector has made substantial inputs in innovation. The proportion of R&D work in the ICT sector is by far the highest in the OECD countries. ICT also influences innovation work in other sectors and has facilitated inter-company research collaboration, and collaboration between companies and the scientific community. Information and innovations also spread more rapidly than before.

Exports by Finland have increased at an extremely rapid rate since the early 1990s, and export growth has been a central element in economic restructuring. Exports accounted for 23% of GDP in 1990, but by 1998 the figure was as high as 39%. Growth has been made possible by competitive prices and

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expertise in high-tech production and product development. Export volume rose by 17.7% in 2000. Exports of electronics and electricity industry products grew by as much as 50%, as markets expanded rapidly and Finnish exporters won new market shares. Exports of the products of the traditional metal and engineering industry also grew substantially.

Recently, prospects for the world economy have deteriorated significantly, and export growth is expected to be less than 50% of last year's figure on account of a decline in international demand. The changing situation is reflected most clearly in the forest industry (Table 1.4).

Table 1.4. **Goods exports by sector**

Percentages

	1970	1980	1999
Foods	3.5	3.0	1.9
Textile, clothes, leather, footwear	6.6	7.8	1.4
Wood processing	15.9	14.7	6.2
Paper and graphics	40.1	29.8	23.2
Chemicals[1]	4.3	11.3	7.4
Metal processing	6.2	6.7	6.9
Other metal and electronics production	18.8	21.9	46.3
Other exports	4.6	4.8	6.7
Total	**100.0**	**100.0**	**100.0**

1. Statistical method changed.
Source: National Board of Customs, foreign trade statistics.

Electronics products accounted for a good 30% of exports in 2000. Other metal and engineering products on the one hand, and wood processing and paper industry products on the other, each accounted for 25% (Figure 1.2).

Most exports go to the EU area, but the fastest growth in recent years has been in developing markets, such as China.

More than 40% of Finnish imports were raw materials and production commodities. A lot of consumer commodities and investment items were also imported (Table 1.5).

1.2.4. *Labour market*

In 2000, the Finnish labour force comprised 2 589 000 people. The proportion of working-age population accounted for by the labour force has always been high in Finland. Though work participation has declined as a result of the recession in the 1990s, it is still above the OECD average. As in other Nordic countries, the figure for women is extremely high, having been supported by extensive welfare services in the public sector. Full-time work is common, and the proportion of women doing part-time work is low, as is the

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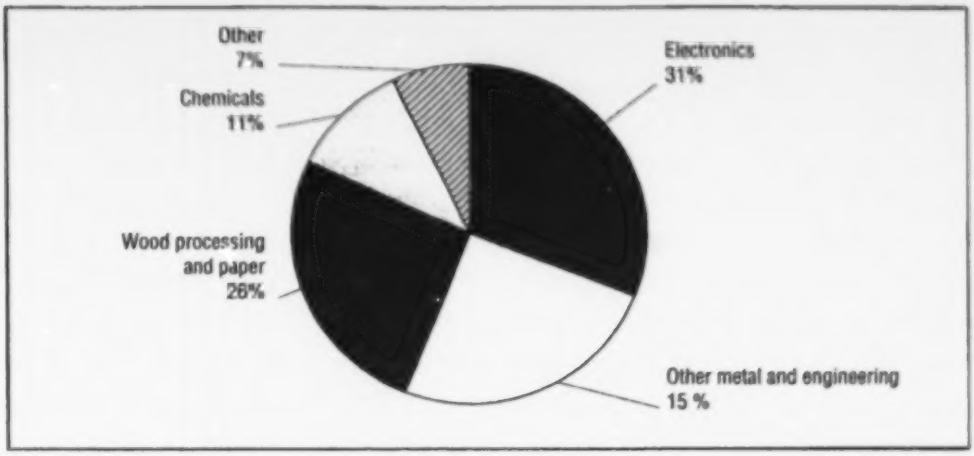
Figure 1.2. **Exports by sector in 2000**



Source: Statistics Finland.

Table 1.5. **Foreign trade 1995-2000**

	Imports		Exports		Balance of trade
	EUR m	%	EUR m	%	EUR m
1995	21 622	42.2[1]	29 605	57.8[1]	7 983
1996	23 836	43.2[1]	31 339	56.8[1]	7 504
1997	27 077	43.1[1]	35 797	56.9[1]	8 720
1998	29 066	42.8[1]	38 779	57.2[1]	9 713
1999	29 691	43.1[1]	39 245	56.9[1]	9 554
2000[2]	36 691	42.6[1]	49 387	57.4[1]	12 697

1. Of total trade turnover.
2. Estimates

Source: Statistics Finland.

proportion accounted for by the young. The latter is largely explained by the extensive coverage of education provision for young people. The problem is short working careers, since the work participation figures for not only the young but also those in the 55-64 age group are low.

The rapid rise in the educational level of the labour force is reflected in the great differences between the various age groups in their level of education. Among the employed, those with the highest educational level are aged 25-34, about 40% of whom had completed a tertiary qualification in 1997. The corresponding figure for the 55-64 age group was 28%. The educational level of those leaving the labour force is low and of those entering the labour force, high (Table 1.6).

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Table 1.6. **Educational structure of the employed by age, 1997**

Level of education	Total (%)	Age (%)					
		15-24	25-34	35-44	45-54	55-64	65-74
Below upper secondary education	25.1	24.2	13.3	18.5	34.3	46.9	68.4
Upper secondary qualifications (ISCED 97:3)	41.8	63.8	46.4	44.2	35.1	24.7	15.5
Tertiary qualifications (ISCED 97:5/6)	33.1	12.0	40.3	37.3	30.6	28.4	16.2
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Source: Statistics Finland, register-based employment statistics.

The organisation rate among wage earners is high in Finland and in the other Nordic countries. Over the last 30 years, pay and other working conditions have been negotiated between central employer and employee organisations. It has been a significant feature of the wage settlement system that the Government has played an integral role in labour market negotiations and that the settlements arrived at have been extensive overall income policy agreements linked to taxation and other policies.

The economic reverberations of a centralised income settlement system have been studied extensively in the Nordic countries. Moderate centralised income settlements in times of economic crisis have played an important part in improving economic status.

Finland does not have a general statutory minimum wage. Instead, minimums for each contracting sector are defined in their respective collective bargaining agreements. Finland's pay trends were moderate throughout the 1990s. In 1998, monthly earnings for regular working hours among women were on average 82% of the figures for men. A higher educational level raises at least gross income level quite considerably. Those with tertiary education have distinctly higher earnings in all age groups, but secondary education would not appear to raise the level of monthly earnings correspondingly (Table 1.7).

In 2000, some 72% of all those employed worked in the private sector and 27% in the public sector. More than 70% of the entire public sector, *i.e.* central and municipal government, are employed by the municipal sector. In many municipalities, a significant proportion of jobs falls within the sphere of public service production, which means that local government is the key employer in the area. In 1995, public services accounted for more than 28% of all municipal jobs in 58 municipalities and 15-20% in 170 municipalities. In the provinces of Lapland, Oulu and North Karelia, public services were the most important employer.

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Table 1.7. **Monthly earnings by level of education and age, 1998**

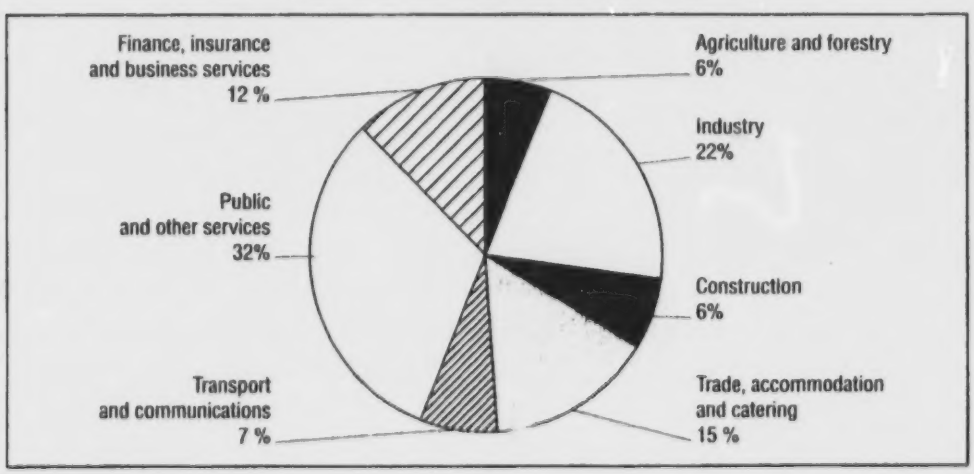
Age	Basic level	Secondary level	Lowest level of tertiary education	Undergraduate level	Graduate level	Postgraduate level
	Euros/month					
15-19	1 219	1 287				
20-24	1 420	1 487	1 427	1 560	1 888	
25-29	1 600	1 677	1 649	1 896	2 203	2 241
30-34	1 695	1 755	1 849	2 176	2 499	2 567
35-39	1 753	1 788	1 975	2 406	2 816	2 857
40-44	1 758	1 805	2 020	2 516	3 081	3 301
45-49	1 755	1 822	2 113	2 664	3 179	3 587
50-54	1 771	1 843	2 208	2 785	3 296	3 746
55-59	1 764	1 837	2 274	2 768	3 376	3 857
60-69	1 690	1 810	2 354	2 765	3 567	4 034

Source: Statistics Finland.

Services provide employment for some two-thirds of the labour force. The service sector has expanded particularly fast in finance, insurance, social services, health care and education. The municipalities are largely responsible for the services provided, and the growth that has taken place in the service industries thus also means expansion of the public sector.

The regional mobility of labour is much greater in the other Nordic countries than it is in Finland, while occupational mobility between sectors is fairly brisk in Finland.

Figure 1.3. **Sectors of work, 2000**


Finance, insurance and business services 12 %
Agriculture and forestry 6%
Industry 22%
Public and other services 32%
Construction 6%
Transport and communications 7 %
Trade, accommodation and catering 15 %

Source: Statistics Finland.

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The information society has changed Finland's occupational structure greatly. In 1997, the ICT sector provided employment for 5.5% of all those employed. The increase in employment has been greatest in the production of ICT goods. The role of computer services and the content industry has also become increasingly important in the provision of employment. The growing importance of the information sector as an employer and its special requirements concerning trained staff are putting pressure on Finland's educational system.

Finland's employment situation deteriorated rapidly as the country's economic status declined in the early 1990s. The proportion of unemployed approached 20% of the total labour force and was among the highest in the OECD. Since the late 1990s, rapid economic growth has helped to reduce unemployment although the rate continues to remain higher than before the recession (Table 1.8, Figures 1.4 and 1.5).

Table 1.8. **Unemployment 1990-2000**

	Unemployed, 1 000 persons			Unemployment rate (%)		
	Total	Males	Females	Total	Males	Females
1990	82	49	33	3.2	3.6	2.7
1991	169	106	62	6.6	8.0	5.1
1992	292	178	114	11.7	13.6	9.6
1993	405	235	170	16.3	18.1	14.4
1994	408	235	174	16.6	18.1	14.8
1995	382	204	178	15.4	15.7	15.1
1996	363	186	176	14.6	14.3	14.9
1997	314	160	154	12.7	12.3	13.0
1998	285	143	142	11.4	10.9	12.0
1999	261	130	131	10.2	9.8	10.7
2000	253	122	131	9.8	9.1	10.6

Source: Statistics Finland.

Regional differences have been great and persistent in Finnish unemployment, with the highest rates traditionally in eastern and northern Finland and the lowest in southern Finland. However, the risk of unemployment is even more clearly linked with level of education. Groupings lacking vocational education or with only a low level of vocational education face a greater risk of becoming unemployed than people with a higher level of education. This is characteristic of boom and recession periods alike, although downward trends always multiply the number of the unemployed at all educational levels.

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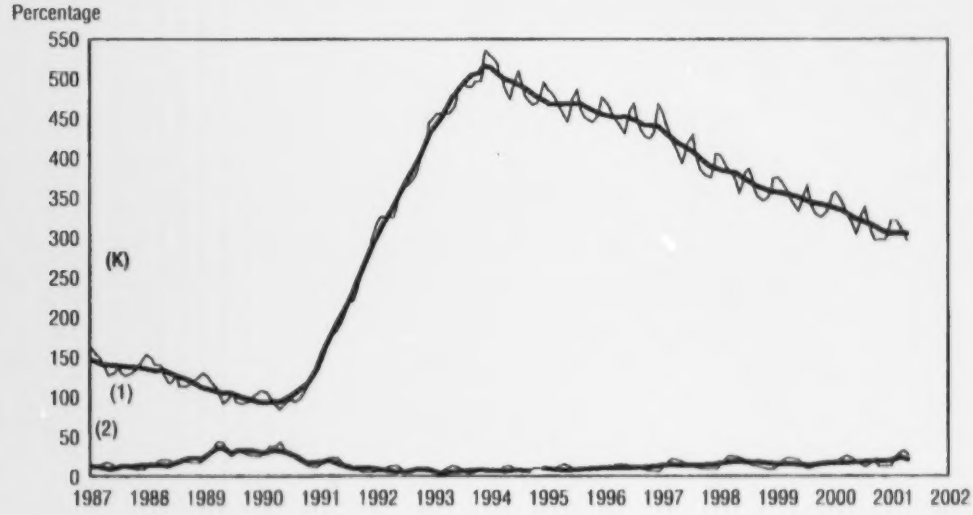
Figure 1.4. **Trend in unemployment and long-term unemployment, 1991-99**

Source: Ministry of Labour.

Figure 1.5. **Unemployed jobseekers (1) and vacancies (2) registered with the employment services, monthly and seasonally adjusted (K)**



Source: Ministry of Labour.

The risk of becoming unemployed is linked with educational level in Finland and in other OECD countries. The link between educational level and success in the labour market is underlined by the fact that a high educational level was appreciated in recruitment in the late 1990s. A degree or diploma was thus a qualification for a large proportion of new vacancies. Employers' appreciation of education increased substantially in the 1990s.

1.2.5. *The information society*

The issue of the information society was considered central to the economic and public management reform of the early 1990s. In its 1995 information society strategy, the Government outlined measures to promote the information society. The strategy prepared comprised five main guidelines:

- Information technology and information networks as tools in private and public-sector renewal.
- The information industry to become an important future sector of economic activity in Finland.
- Professional expertise in information and communications technology to be maintained at a high overall level, with selected peaks.
- Access to information society services and basic skills for all.
- Ensuring competitiveness and service capacity for Finland's entire information infrastructure.

Information society development plays a central role in restructuring the economy, strengthening the content industry and intensifying public services in the current Government Programme. The goal was to turn Finland into an information society where information and expertise are an integral part of education and a key production factor.

The ICT amenities used by households increased substantially over the past decade, particularly the number of mobile phones. Nearly 80% of all households have a mobile phone, while personal computers and Internet connections have also increased, though more slowly. In the less densely populated areas of northern and eastern Finland, information technology has gained ground more slowly than in other areas. Households have most links with information networks in the Helsinki metropolitan area and other growth centres (Figure 1.6).

In autumn 1999, 60% of men and women had access to a computer. Approximately one-third of all Finns had used a computer at home, at work or in a library. In international terms, banks, schools, libraries and hospitals are also fairly advanced in their utilisation of modern information and communications technology.

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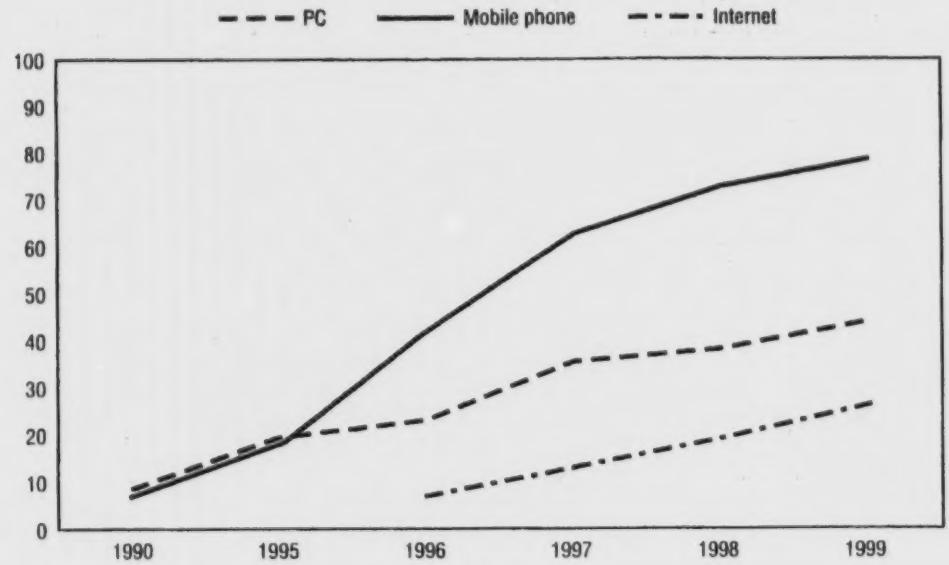
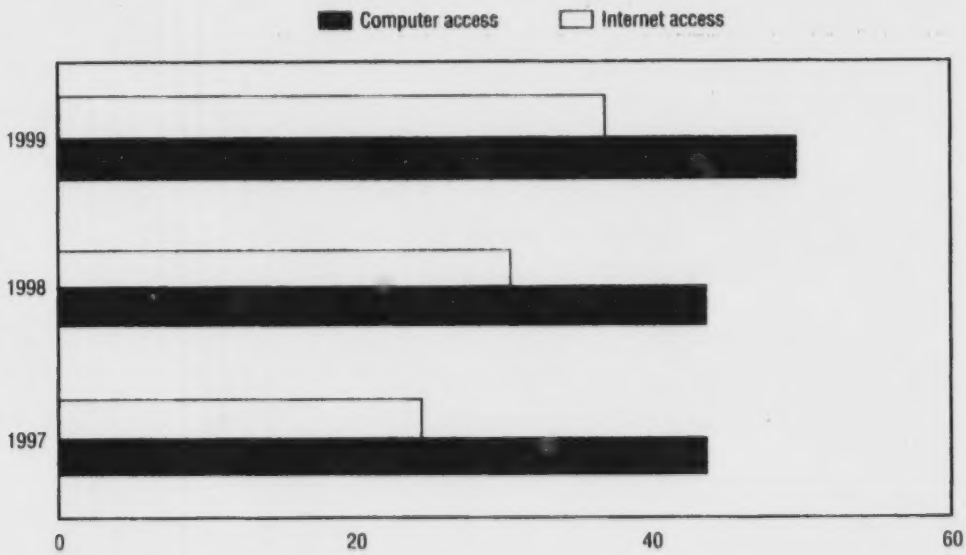
Figure 1.6. **Equipment in households, 1990-99 (%)**



Source: Statistics Finland.

Figure 1.7. **Access to a personal computer and the Internet at home, at work or at a place of study, 1997-99**



Source: Statistics Finland.

In international comparisons of information and communications technology, Finland comes in the top third among EU countries in use of computers and the Internet. When comparing the use of the Internet in the EU and USA, it is evident that the USA is clearly ahead of the average European level. However, the penetration of the Internet both in Finland and Sweden is almost level with the USA. Finland leads Europe in the number of mobile phone connections per capita.

Use of and familiarity with various types of hardware is most common in the young age groups. Only 25% of all 16- to 25-year-olds do not use a computer at all, while the equivalent figure in the 36-45 age group is 36%, 47% in the 46-55 age group and 80% in the 56-65 age group. The level of know-how is closely linked with active use. The younger age groups are clearly more skilled in use of the Internet and in Word processing.

In Finland, both the public and the private sectors have made inputs in promoting the information society. Keeping Finland among the leading information societies is a key challenge. The strengths are a high level of education, a highly advanced communications infrastructure and extensive utilisation of ICT in both the private and the public sectors. Finnish libraries also form a well-functioning network that offers links with international library and information service networks and free access to the Internet for all citizens.

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PART I

Chapter 2

Education System and Policy

Abstract. *Chapter 2 describes the education system. It provides information on the overall structure and standards and student flows in the schooling system; the administration, structure and priorities of higher education; main features of vocational education and training; and government targets for lifelong learning in Finland.*

2.1. The Finnish education system

The Finnish education system consists of pre-school education, comprehensive school, post-comprehensive general and vocational education, higher education and adult education.

Pre-school education is provided in a day-care centre or a comprehensive school in the year preceding the beginning of school.

Comprehensive school is a nine-year system (with a voluntary 10th form) providing education for all children of compulsory school age. All Finnish citizens are subject to compulsory education for a period of ten years starting in the year that they become seven years of age. Compulsory education ends when the pupil reaches the age of 17 or when he or she has completed the comprehensive school syllabus, whichever occurs first.

General upper secondary schools and vocational schools give post-comprehensive school education. The general upper secondary schools offer a three-year general education curriculum, at the end of which the pupil takes the national matriculation examination, which is the general eligibility criterion for higher education. Candidates may take it in three consecutive examinations, that is, over a period of 18 months. There are four compulsory tests in the matriculation examination: mother tongue (either Finnish or Swedish, depending on the language of instruction at the school), the other national language, a foreign language, and either mathematics or general studies. In addition, candidates may take optional tests.

The general upper secondary school network covers the entire country. The schools follow a national core curriculum, but recently the range of choice has been broadened. Individual schools can cultivate a more distinct image; some upper secondaries have a specialised curriculum, giving emphasis to the arts or some other field. Upper secondary school has traditionally constituted the main channel to university education.

Finnish vocational education and training is traditionally institution-based to a very large extent. Taught courses form the core of the programmes but on-the-job training is nowadays included in the study programme in all fields. From 2001 onwards all the qualifications have been based on three-year courses and have produced general eligibility for higher education. An initial vocational qualification can be completed through apprenticeship training

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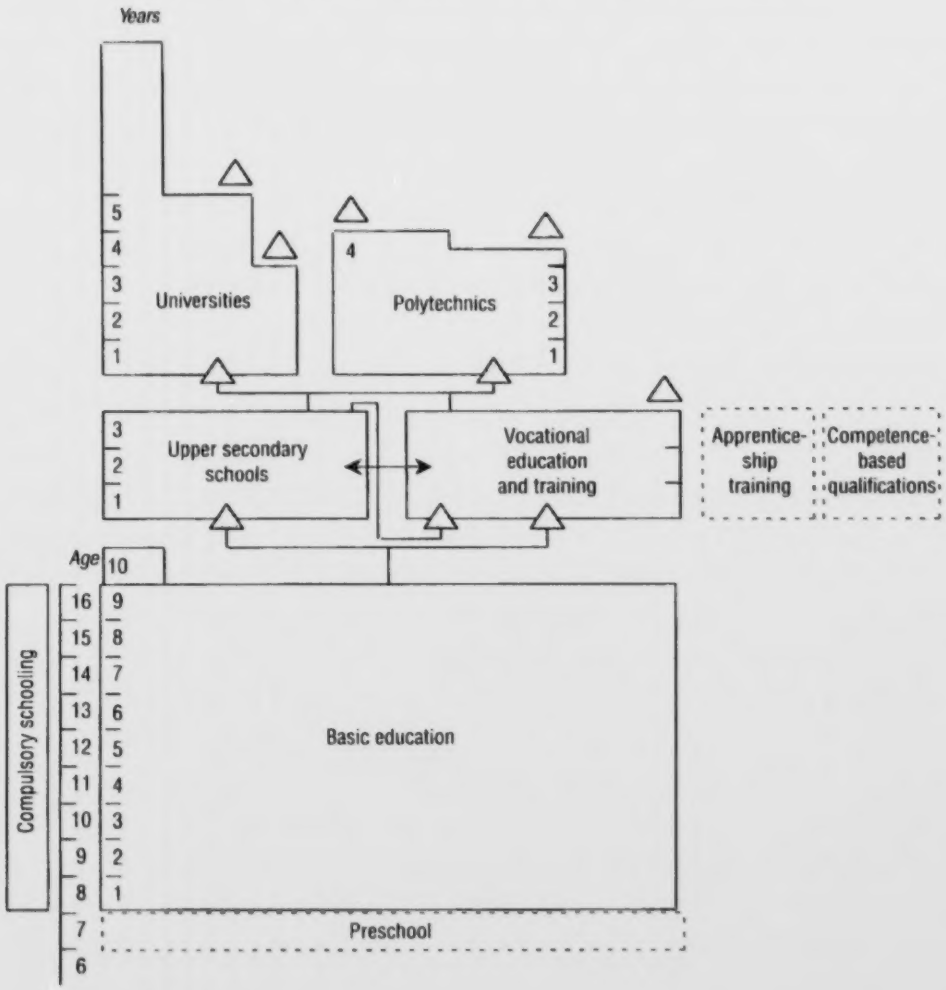
Figure 2.1. **The education system in Finland**



Source: Ministry of Education.

also. In addition to these, a vocational qualification can also be taken as a competence-based examination evaluated by an examination board.

The Finnish higher education system comprises two parallel sectors: universities and polytechnics. The polytechnics were established during the reform process of the 1990s, and now a network of 29 polytechnics covers the entire country. Polytechnic degrees are Bachelor-level higher education degrees with a professional emphasis and take 3.5 to 4 years to complete.

There are 20 universities in Finland, ten of which are multi-faculty institutions and ten specialist institutions. Of the specialist institutions, three are universities of technology, three are schools of economics and business

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administration, and the remaining four are art academies. In addition, university-level education is provided at one military academy under the Ministry of Defence. All universities engage in both education and research and have the right to award doctorates. The first university degree, which roughly corresponds to a Bachelor's, can generally be attained in three years of full-time study and the higher, Master's degree in five years, i.e. a further two years following the Bachelor's degree. There is also an optional pre-doctoral postgraduate degree of licentiate, which can be completed in two years of full-time study, after the Master's degree. Full-time studies for a doctorate take approximately four years following the Master's degree.

Adult education is offered in Finland at about 1 000 educational institutions and universities. By adult education we mean organised training specifically aimed at adults. Indeed, it is typical of Finnish adult education that it is clearly distinct from education designed for young. All levels of the education system except the basic university level offer education and training aimed specifically at adults. It is therefore possible to study for a degree also in adult education. Adult education can also offer apprenticeship training, supplementary and continuing education to update and extend vocational and professional skills, social studies conferring civic and work community skills, and study purely for recreation. Annually some one million people participate in adult education.

In Finland, spending on public education accounts for 13% of all public expenditure. Some two-thirds of this consists of State funding and one-third of municipal funding. Public expenditure on education was 6.2% of GDP in 1997.

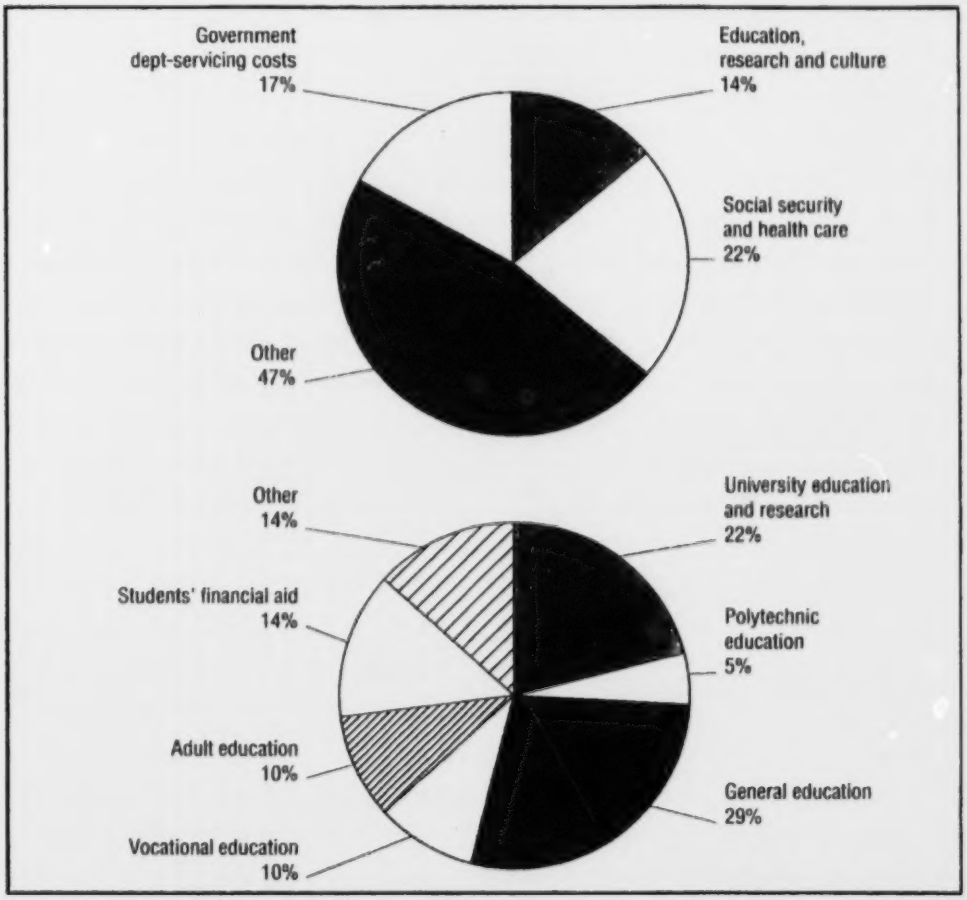
Figure 2.2 presents the percentages of total expenditure for all types of institutions in 2000. In addition to expenditure by educational institutions, the study includes calculated payments to pension insurance funds and pensions paid to comprehensive and upper secondary school teachers and the cost of pre-primary education for 3-6 year-olds at day-care centres.

Instruction is usually free of charge at all levels of education; there are no tuition fees at any level. Compulsory education is completely free of charge for the pupils, but at higher levels of education, students may have to pay for study materials, meals and transport.

2.1.1. *Standard of education*

The standard of education in Finland has risen sharply in recent decades. By international comparison, Finland is currently at the general European level. Young people are more likely to have completed a certificate, diploma or degree than their elders. In the 25-34 age group, 83% have completed a qualification at least at the upper secondary level; the corresponding figures

Figure 2.2. **Expenditure in education, 2000**



Source: Ministry of Education.

are 37% for the 55-64 age group. The rising trend still continues, and the proportion of young people in education is very high.

The principle in planning educational services is to offer the entire age group completing comprehensive school a study place in either general upper secondary education or upper secondary vocational education. Openings in higher education will be offered to about 65% of the age group.

With the exception of certain areas (*e.g.* engineering, social services, health sciences), sexual equality can be considered to have been achieved in Finnish education. There is less differentiation by sex in the university disciplines than at other levels of study.

There are still regional differences in education: the proportion of people aged 15 or more who have a degree at least at the upper secondary level varies

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locally from 50% to 60%, while the rate for the whole country is 55%. Social background still affects educational choices: children of blue-collar workers and farmers tend to opt for vocational education, whereas the children of white-collar workers usually go to university. However, the rising education level of parents should gradually affect their children's choices: the more highly educated the parents are, the more willing their children usually are to obtain a higher qualification.

2.1.2. *Student flows*

Comprehensive school 9th graders numbered approximately 67 300 in 1999. 93% of them continued their studies as follows: 55% at upper secondary school, 35% in initial vocational education and training and 3% in the optional 10th grade at comprehensive school. 7% did not immediately continue their studies after comprehensive school, compared with 8% the year before.

In 1999, 34 500 completed upper secondary school. 79% of them applied, and 21% did not apply, for further studies the year they completed their matriculation examination. Less than half of those who completed their matriculation examination in 1999 applied for university, less than a third for a polytechnic and slightly over 1% for vocational education and training. Only 37% of those who completed their matriculation examination in 1999 were able to continue in further education: 19% started at university, 13% at polytechnics and 5% in vocational education and training. 63% of them did not continue their studies immediately. Less than 40% gained immediate entry to further education throughout the 1990s.

First-year places in higher education are allocated as follows: every year about 66% of the average 19-21 age group has a place at either a university or polytechnic. On average, however, it takes 2-3 years to enter a university or polytechnic. 49% of new polytechnic and 62% of new university students were in the 19-21 age group in 1999. Over 20% of new university and polytechnic students were at least 25 years of age.

In 1999, 47% of those with a vocational qualification entered the labour market. 16% continued their studies, one-third of these going to a polytechnic. Approximately 25% of those with a vocational qualification were unemployed at the end of the year. In 2000, 69.5% of the young people who accepted a place at a polytechnic had completed upper secondary school, and 29.5% came through the vocational channel (Figure 2.3).

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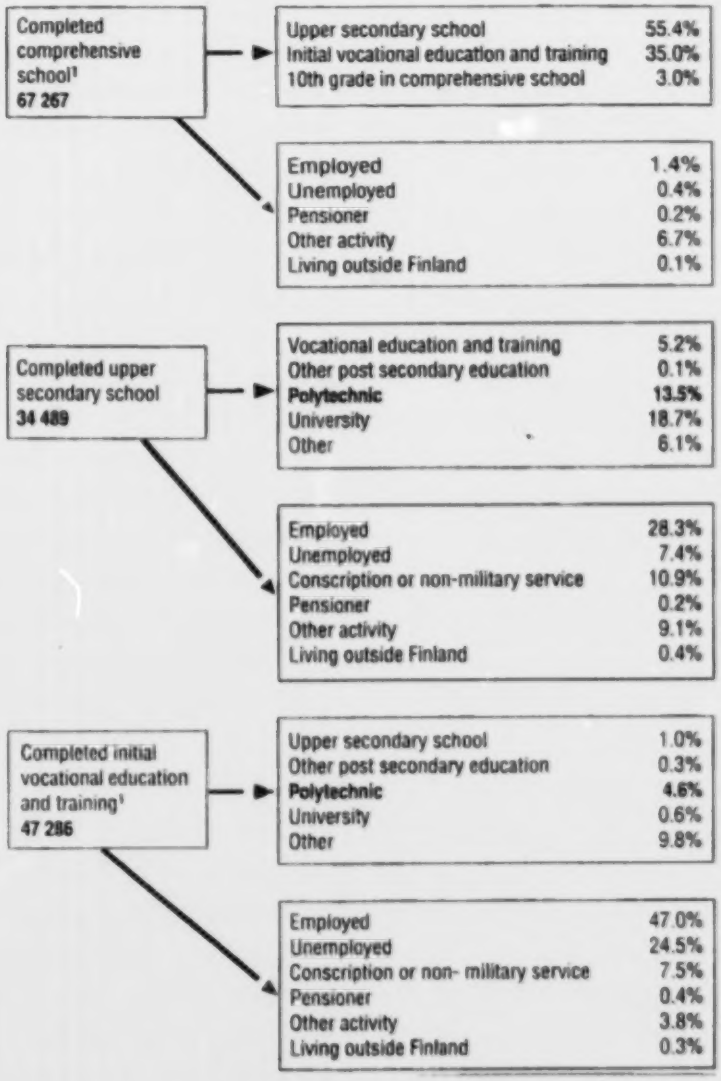
Figure 2.3. **Student flows among school levers, 1999**



1. People who have been working or engaged in other activity while studying are counted as students.
Source: Statistics Finland.

2.2. Higher education

2.2.1. *Administration of higher education*

Parliament enacts laws on education and determines the overall lines of education policy. The Government and the Ministry of Education are responsible for implementing these principles in central government. The Government adopts a Development Plan for Education and University Research for a six-year period every four years (Figure 2.4).

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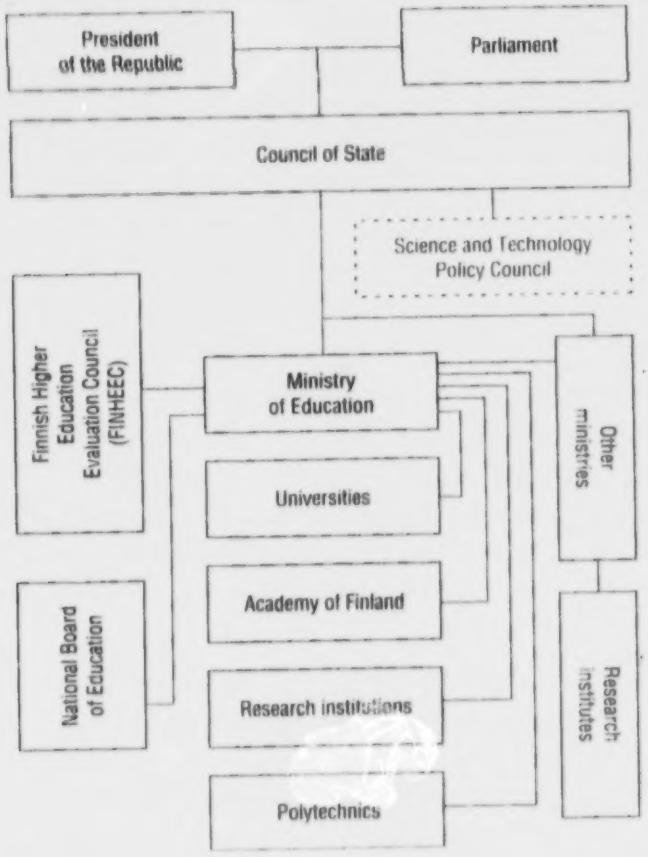
Figure 2.4. **Central administration of higher education and research**



Source: Ministry of Education.

Nearly all publicly funded education, from primary to higher, is steered or supervised by the Ministry of Education. Training related to national defence, law and order, and some aspects of communications and transport is administrated by other ministries. Most existing private institutions are in the vocational sector, but they, too, rely heavily on public funding, and the education they provide is subject to public supervision.

The Ministry of Education is charged with the administration of education, research, culture, youth issues and sports; its remit includes all universities and polytechnics. In matters related to comprehensive and upper secondary school, vocational institutions and adult education, the Ministry is assisted by an expert agency, the National Board of Education.

The Finnish Higher Education Evaluation Council (FINHEEC) advises the Ministry of Education and assists the universities and polytechnics in matters relating to evaluation.

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The Academy of Finland takes care of central research administration and finances most university research. The Academy has four research councils appointed for three-year terms, which are responsible for financing research in their disciplines. Another important task for the Academy is to evaluate research. Public funding for technology and development is channelled through the National Technology Agency (Tekes), which also plays a major role in external funding of the universities.

The Science and Technology Policy Council is responsible for promoting major issues related to science, technology and scientific training. The Council advises the Government and Ministries on the orientation and co-ordination of science and technology policy, the general development of scientific research and training and Finnish participation in international scientific and technological co-operation.

2.2.2. *Key objectives and policy priorities*

Education and research are crucial to Finland's strategy for the future, which aims at the well-being of its citizens, cultural diversity, sustainable development and prosperity.

The watchwords in education policy over the next few years will be high quality, educational equality and the principle of lifelong learning. Finland is to be developed into a humane knowledge-based society through education and research. The Government is committed to maintaining the high level of public funding to the education and research system. Special attention will be paid to developing teaching and learning at all levels of education through teacher education and guidance services.

In order to meet the needs of the regions, higher education institutions must pay special attention to developing their regional responsiveness through intensified co-operation with local business and industries and by facilitating transfer of expertise to working life. The higher education system will be developed as a whole, comprising the two sectors in which universities and polytechnics complement each other.

The system of higher education degrees will be developed to correspond to the needs of working life and also in view of the international development of degree structures.

The key targets of education policy in the near future were laid down in a development plan for education and university research between 1999 and 2004, which was approved by the Government on December 29, 1999. In a nutshell, development of education and research in the early 2000s will focus on:

- basic educational security: no tuition fees at any level of education, regional and linguistical coverage by school and higher education network, students' financial aid schemes;

- principle of lifelong learning: pre-school education for all, large provision of education at all levels, better financial opportunities for liberal education and professional upgrading, raising the level of education among the middle-aged population, development of vocational competence-based qualifications, targeting educational services for third-age students;
- implementing the information strategy for research and education: securing knowledge and skills in the knowledge-based society for all, developing initial and in-service teacher training, virtual school and virtual university projects, expansion and diversification of content production and strengthening the necessary infrastructure in education and research;
- internationalisation: intensified international co-operation at all levels of education; approx. every third higher education student is expected to take part of his or her degree abroad;
- improving mathematics and science skills: supporting the development of knowledge-based society, sustainable development, business and citizens' mathematical and scientific knowledge and know-how;
- continuing the policy of rewarding centres of excellence and further developing researcher training: quality through evaluation and competition, further development of graduate school system;
- strengthening the status of evaluation as an integral part of a steering and development policy emphasising the importance of quality: monitoring the overall performance of schools and higher education institutions, rewarding good performance in education and adult education.

2.3. Vocational education and training

In Finland, initial vocational education and training is mainly institution-based. At the beginning of 2000 there were 226 providers of training leading to vocational qualification: 51 of the providers were local authorities, 68 municipal federations and 107 private. Additionally, the government runs five special-needs institutes and a training centre in the Saami region in Lapland.

Initial vocational training programmes take three years to complete. The programmes provide both broad-based and job-specific competence.

The programmes consist of 120 credits, including at least 20 credits of on-the-job learning: 90 credits of vocational studies, 20 credits of core subjects and 10 credits of free-choice studies. On-the-job learning is guided and target-oriented training given at the workplace; it provides part of the work-based skills included in the qualifications.

Vocational training programmes are built on the comprehensive school curriculum. Matriculated students can also opt for initial vocational education and training; their studies are shorter owing to credit transfer.

Vocational education and training is provided in the following sectors: natural resources, technology and transport, business and administration, hotel, catering and home economics, health and social services, culture, and leisure and physical education.

The qualifications provide comprehensive basic competence for different occupations in the field concerned and more specific competencies in some area. The three-year qualification also gives formal eligibility for further education in polytechnics and universities.

It is also possible to take a competence-based examination to gain a vocational qualification. This track is mainly intended for the needs of the adult population. Preparation for competence-based examinations is provided by vocational institutes and in the form of apprenticeship training.

Vocational education and training has undergone intense development in Finland throughout the 1990s. Legislative measures were taken to enlarge the eligibility provided by vocational education for further education with a view to enhancing its attractiveness and appreciation.[11]

The Development Plan for Education and Research adopted by the government stresses the development of secondary vocational training into a more viable track to higher education. The aim is that one-third of polytechnic graduates come through the vocational track. The Ministry of Education has stressed this aim in its negotiations on target outcome with polytechnics.

2.4. Lifelong learning in Finland

In its development plan for education and research in 1999-2004, the Government set the following targets for lifelong learning: practically the entire age group should complete comprehensive school; young people entering the work market should have wide and professionally flexible competence and better learning skills than before; and their average level of education should be better than before. In the case of adults, the Government's targets are to help provide adults with the necessary skills to survive in the modern changing work climate, and as a practical measure to focus on raising the basic educational level of the middle-aged population particularly, and to maintain both social cohesion and democratic values through training.

For employment, the Government's target is to raise the employment rate close to 70% in 2003 from the current rate of 67%. Another long-term target is to raise the average age of leaving the labour market by 2-3 years from the current 59 years closer to the general pensionable age of 65.

The population's older age structure will have a major impact on the balance and functioning of the labour market. By the middle of the decade, the age group of those entering the labour market will be smaller than those

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leaving it. The difference will be an annual 10 000-20 000 between 2005 and 2015, the greatest discrepancy coming at the end of this decade and the beginning of the next. We will already have to prepare for problems with poor labour force availability as a result of this development in the very near future.

The key to raising the employment rate and to solving labour force availability problems is how effectively the unemployed and people outside the labour market can be brought into the labour market. Probably the best way to do this is to increase opportunities for women and those over 50. The employment rate among women is currently 64%. The employment rate would also be raised if young people were brought into the labour market a little earlier. Ways should also be found to employ people with limited work opportunities. Labour supply bottlenecks and problems with structural employment must be treated simultaneously. In order to reach the employment targets, lifelong learning measures must be used.

According to the OECD's recent *Education Policy Analysis 2001*, Finland and the other Nordic countries are at the forefront of lifelong learning, although clear areas of improvement can still be found.

By "lifelong learning" we primarily mean a principle that underlies labour policy ensuring that people are given opportunities for continuous learning. The key element here is to provide young people entering the labour market, on the one hand, and adults already in it, on the other, with a good level of basic training and skills. People should also be motivated to learn new things.

The Ministry of Education has set up a parliamentary adult education committee to study the targets and funding of adult education, and to try to make educational supply and demand meet. The deadline for the committee to complete its work is January 31, 2002.

By lifelong learning we secondarily mean a policy line ensuring that people can learn new things whatever their age and using all possible environments. Conclusions as to how successful these measures have been can be drawn by, for instance, analysing where adults are studying, how well young people and adults are able to utilise what they have learnt outside the current education system, and how successful people are in finding information and making informed choices concerning their education.

The number of adults of working age (25-64 years) taking part in adult education is very high (57%) and remains high all the way up to the 46-55 age group. The lower participation in the over-55 age group is mainly in adult education financed with public funds.

There are some major differences in participation between different groups, however. Only one-third of those with only comprehensive school behind them take part in adult education, while the figure in the group with a

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tertiary qualification is some 80%. Two-thirds of working people participate, but only one-third of the unemployed.

Finland has recently been participating in an international study on adult education by the OECD. The results of this study will help to form a basis for the work of the Finnish parliamentary committee, which is also studying aspects of participation.

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PART I

Chapter 3

The Polytechnic Reform Process

Abstract. *Chapter 3 explains why the Ammattikorkeakoulut (AMK for short) or system of polytechnic education was created in Finland. It considers the background, the goals of the reforms to create the AMK, and the evolution from experiments in a limited number of institutions, to the creation of a full-blown system.*

3.1. Background to the reform

Systematic action was taken to develop vocational education and training in the 1970s and 1980s. When the OECD made its 1981 review of Finnish educational policy, one of the recommendations was that polytechnics should be established, side-by-side with the existing universities. At the time, the official response was that the proposal was not practicable in terms of the future development of the education system. Finland had in fact just launched an important large-scale reform of vocational education that also included postsecondary education.

By the end of the 1980s, however, the situation had changed. It was felt that the education and training structure did not respond to the rapidly changing needs in the labour market or the changing international environment. A new evaluation of the situation was made by the Ministry of Education, which proposed not just the establishment of polytechnics, but also closer co-operation between upper secondary schools providing general education and post-comprehensive vocational schools.

The aim was to channel the increase in higher education provision to polytechnics rather than universities and at the same time diversify higher education. Initially, the justifications offered for the polytechnic reform were tied up with general problems in the national education system, specifically the ever-growing demand for university-level education (though postsecondary vocational education had been developed partly as a follow-up to upper secondary school), and the structural rigidity of vocational education in general. Vocational education was divided into separate fields, each with its own schools and institutes. These were often very small and there was little co-operation between fields of study. It was only later that international considerations came to the fore, bringing a need for comparisons with the education systems in other countries. The Finnish vocational education system was difficult to describe and grasp, and in particular there was little understanding of the role of postsecondary vocational education and its standing.

3.2. Goals and methods of the reform

The main goals of the polytechnic reform, as laid down at the beginning of the 1990s, were as follows:

- To raise the standard of the education provided.

- To respond to new demands for vocational skills.
- To increase the attractiveness of vocational education.
- To improve international comparability.
- To improve the operating capacity of the vocational education system.
- To decentralise the administration and rationalise the network of schools and institutes.
- To improve the regional coverage of the education.

The main methods used in the reform can be summarised as follows:

- Integrating several schools and institutes to form polytechnics.
- Reforming the degree system.
- Raising the standard of teaching.
- Improving teaching methods.
- Promoting interaction between school and work.
- Making education and training more international.
- Improving library and information services.

The Ministry's proposal for the reform came as a surprise to politicians, the press, the universities and the vocational institutions themselves, and considerable doubts were expressed. Up to that point, the whole higher education concept had been understood solely in terms of university study, and there were major doubts about the country's potential for creating professionally oriented institutes of higher education. The Government therefore proposed that the reform should begin with an experimental phase.

Basic preconditions for launching the reform were otherwise good, however, because postsecondary vocational education had been systematically developed in every field during the 1970s and 1980s. Thus the new polytechnic-level teaching did not have to start out from scratch; it had a strong qualitative and quantitative foundation that could be built on to create a prime component in the overall system of higher education.

3.3. From experiment to establishment

The polytechnic reform began in 1991 with the approval of legislation establishing an experimental period, under which 22 temporary polytechnics were set up in the early 1990s. The aim of the experiments was to gain experience that could be used later in building up a permanent system, and the temporary polytechnics were given the chance of eventually gaining permanent status. A number of research projects were also launched for monitoring the experimental phase.

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The good experience gained from the experiments, international evaluations, and concurrent changes in the occupation structure and in working life all speeded up progress towards a permanent system and passing of the necessary legislation. It was then also judged that an unsustainable situation would arise very rapidly if education that was basically similar was to go on being part of both the vocational education system and the higher education system. Parliament approved permanent legislation on a polytechnic system in February 1995.

The review of Finnish higher education policy made by the OECD in 1994 led not only to the passing of this permanent legislation – which the report recommended – but also to aspects of the actual reform process. The report recommended that the planned permanent system should be set up gradually, over the course of at least five years, with the education authorities providing special support measures as called for by the quality criteria set.

The plan for the future development of education and research approved by the Government in 1995 defined the strategy for carrying out the polytechnic reform. This was to take place by 2000, with most postsecondary vocational education taking the form of polytechnic studies. At the same time, it was decided to close down vocational education at the intermediate (postsecondary) level. The establishment of each new polytechnic still had to be preceded by an experimental and developmental stage. The basic assumption was that licences for permanent polytechnics would only be granted after they could demonstrate high quality and good performance during this experimental stage. The core of the strategy would thus be constant development, and gradual attainment of permanent status. Politically, this line meant that it was not essential to decide on the system's scale and overall form in detail at too early a stage.

The first permanent polytechnics went into operation in August 1996 under licences granted by the Government. Throughout the second half of the 1990s the Government continued to grant new polytechnics operating licences every year. The Finnish Higher Education Evaluation Council assessed the applications and made a recommendation on them to the Ministry of Education. Thus the polytechnics had to do considerable development work before they succeeded in winning the right to a permanent licence.

Since August 2000, all Finnish polytechnics have been permanent. In the course of a process that took a full decade, about 80% of volume of education provided by the old postsecondary vocational schools and institutes was raised to a standard high enough to qualify for admission into the polytechnic system. The remaining 20% continued to function in post-comprehensive vocational education.

Before the reform, Finland had about 250 postsecondary vocational institutions. In the reform, 29 polytechnics were formed, most of them multidisciplinary.

3.4. Polytechnic support programme

A financial support programme was launched to back up the polytechnic reform, aiming to ensure attainment of the goals set and reinforcement of the overall polytechnic infrastructure. When the experiments were first launched, this support went mainly into improving the qualifications of teachers at the temporary polytechnics and into internationalisation.

As the system became more permanent, the support programme expanded and grew more systematic. Integral elements included raising teachers' qualifications, developing library and information services, developing online learning environments and information networks, career and recruitment services, and internationalisation. The Ministry of Education has made additional annual grants for these purposes, agreed on jointly in the objective and result negotiations between the Ministry and individual polytechnics. The programme will remain in effect in the early years of the 21st century. Over a ten-year period a total of some EUR 170 millions will be devoted to this programme of supplementary public support.

The goal set for 2001-2003 is that an average of some 1 500 polytechnic teachers a year should be working on Master's, Licentiate's or Doctor's degrees. In internationalisation, the aim is for an average of 7 000 students a year to study or work as trainees abroad. In the longer term, the aim is to set up a reciprocal exchange system. For 2001-2003, the objective is to have an average of 4 000 foreign students studying at Finnish polytechnics every year. In library and information services, one goal is for the polytechnics to devote at least 5% of their running costs to such services.

The polytechnics have built up various joint networks in order to develop their operations, and many are already well established. The Ministry of Education has provided separate grants for the polytechnics co-ordinating these networks.

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PART I

Chapter 4

The Polytechnic System

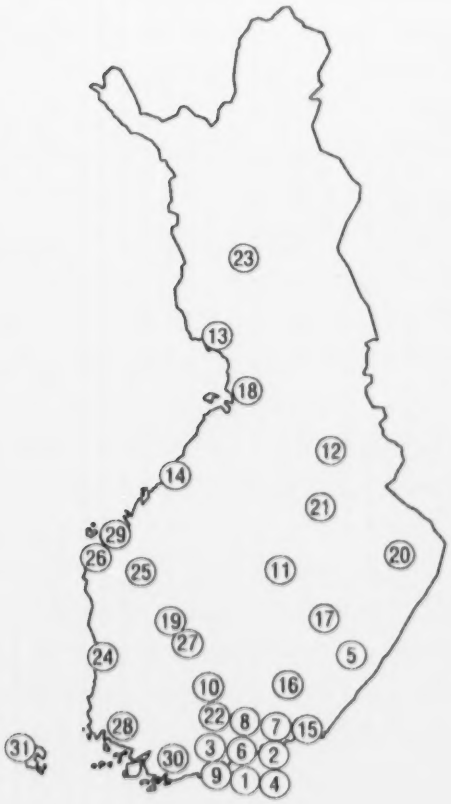
Abstract. *Chapter 4 examines the main features of the Ammattikorkeakoulut (AMK) system. It reports on the size and location of the various institutions, developments in the scale of enrolments, administration, steering and funding, quality assurance and evaluation, and the statistics for monitoring and evaluating the system.*

4.1. The polytechnic network and educational provision

4.1.1. *The polytechnic network and structural development*

The polytechnic network has taken shape in phases since the first were put on a permanent footing in 1996. Since 2000 the entire polytechnic system has been permanent. Altogether 29 polytechnics situated all over the country now operate under the Ministry of Education. In addition, there is a Police Polytechnic under the Ministry of the Interior, and a polytechnic in Åland (Map 4.1).

Map 4.1. **Finland's polytechnics**



1) Arcada Polytechnic
2) Diaconia Polytechnic
3) Espoo-Vantaa Institute of Technology
4) Laurea Polytechnic
5) South Carelia Polytechnic
6) Haaga Institute Polytechnic
7) Helsinki Business Polytechnic
8) Helsinki Polytechnic
9) Humanities Polytechnic
10) Häme Polytechnic
11) Jyväskylä Polytechnic
12) Kajaani Polytechnic
13) Kemi-Tornio Polytechnic
14) Central Ostrobothnia Polytechnic
15) Kymenlaakso Polytechnic
16) Lahti Polytechnic
17) Mikkeli Polytechnic
18) Oulu Polytechnic
19) Pirkanmaa Polytechnic
20) North Karelia Polytechnic
21) Pohjois-Savo Polytechnic
22) Police Polytechnic
23) Rovaniemi Polytechnic
24) Satakunta Polytechnic
25) Seinäjoki Polytechnic
26) Swedish Polytechnic
27) Tampere Polytechnic
28) Turku Polytechnic
29) Vaasa Polytechnic
30) Sydväst Polytechnic
31) Åland Polytechnic

Source: Ministry of Education.

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The polytechnic network has taken on its present scale in stages, following a process guided by both national and local factors. The parties involved in the process are the cities, the municipalities and joint municipal boards, the provinces, the regional councils and other regional organisations. Many stakeholders have played an important role in building up the overall network.

This network was built up in accordance with set guidelines, by creating groupings of different schools and institutes in which the institutions themselves, the bodies maintaining them and the above-mentioned regional organisations all play an influential role. The administrative organisations behind such "consortia" are also important. Initially, there was considerable uncertainty at the local level about the direction and form that the polytechnics should take. This found particular reflection in planning work on the institutional basis for the polytechnics, which was extremely fragmentary in places.

In terms of structure, the polytechnics are regional and multidisciplinary. Because there are several in many regions, numerous forms of co-operation have naturally developed between them. Collaboration has been actively promoted, especially in large regions such as Uusimaa and Pirkanmaa. In the interests of efficient functioning, it has also proved useful to rationalise the division of labour between polytechnics, and in many fields, they have themselves agreed on the distribution of training and education between them. Their objective and result agreements with the government also agree on various developmental, work-sharing and collaborative issues related to their structural development.

Finland's new network of polytechnics covers the whole country. One goal of the reform was to promote regional development and meet regional needs for higher education. From this viewpoint, a network extending into every one of the country's 19 regions is justified. Regions with a large population often have several polytechnics. Their basis in former vocational colleges and institutes is reflected in the fact that the polytechnic network generally takes many forms and is geographically dispersed even within individual regions.

The present polytechnics have been formed from some 215 individual institutes. In some, what used to be different and separate institutions have merged to form a compact whole operating as a single unit in a single locality. On the other hand, many polytechnics comprise a number of separate regional units viewed primarily as individual institutions, and only secondarily as components in a much larger polytechnic body.

Integrating numerous separate institutions under the umbrella of a single polytechnic was viewed as a task calling for very close collaboration between them. When the temporary polytechnics were put on a permanent footing,

one important criterion was how well the component parts succeeded in working together and generating mutual cohesion. This cohesion is illustrated, for instance, by the proportion of combined studies and how easily students can also choose to study in areas outside their own particular sectors. An important factor here has been the creation of study modules that cross internal boundaries between different areas of education and training. The research and development that is increasingly viewed as part of the polytechnics' remit is seen by the Ministry of Education as rational and effective only in sufficiently large units that can draw on multidisciplinary resources. To make the creation of this kind of polytechnic body possible, the Ministry has worked to help the polytechnic network to develop into coherent entities.

However, the main responsibility for a well-functioning network of individual units is carried by the polytechnics themselves, and they have certainly done much to improve the functioning of their own communities, either by integrating and centralising units, or by promoting co-operation between units in some other way. One way of increasing cohesion is the widely used breakdown into "result areas".

4.1.2. *Creation of new student places and quantification of educational provision*

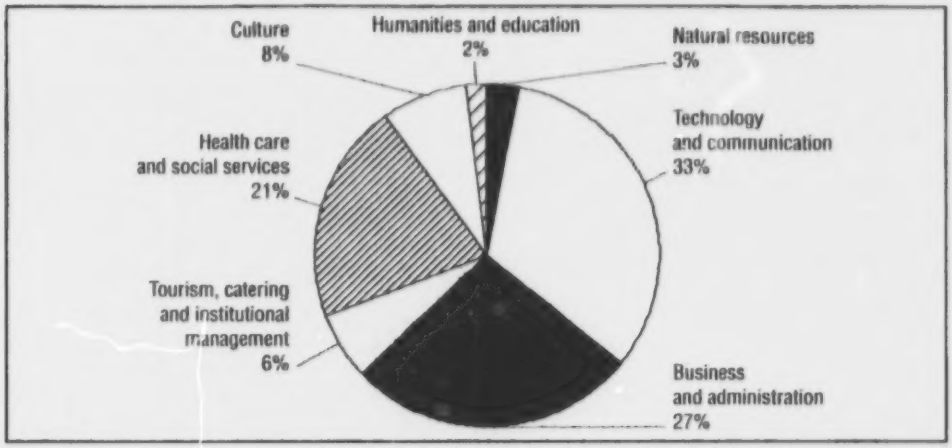
The overall scale of the new polytechnic system was an open question right up to the final stages of work on the reform. Because the goal had been set of integrating most postsecondary vocational education into the polytechnic network, the permanent system is naturally very extensive. In 2000, over 90 000 students were studying within the system, plus a further 20 000 adult students. There were some 24 000 new study places.

The education provided by the polytechnics falls into seven main sectors. The largest is technology and communications, where first-year places in 2001 account for about a third of the total. Next in terms of first-year places come business and administration (27% of the total supply), and health care and social services (21%). Culture accounts for 8%, tourism, catering and institutional management for about 6%, while the smallest sectors are natural resources (3%) and humanities and education (2%) (Figure 4.1 and Table 4.1).

About 88% of all new study places are in Finnish-speaking education, about 6% in Swedish-speaking and 6% in some foreign language, mostly in English.

According to the education and research development plan up to 2004 approved by the Government, the basic aims in scaling education provision are to meet the competence and culture needs of the whole population, to ensure balanced regional development and to take the changing needs of society and working life fully into account. According to the plan, education

Figure 4.1. **New study places in various sectors of education, 2001**



Source: AMKOTA database.

Table 4.1. **Trends in new study places, 1998-2001**

	New study places at polytechnics (adults not included)			
Sector	1998	2001	Change	Change %
Natural resources	663	750	87	13
Technology and communications	5 610	7 955	2 345	42
Business and administration	5 846	6 510	664	11
Tourism, catering and institutional management	1 012	1 540	528	52
Health care and social services	5 258	5 060	–198	–4
Culture	1 129	1 930	801	71
Humanities and education	456	485	29	6
Total	19 974	24 230	4 256	21

Source: AMKOTA database.

must react rapidly to the training and education needs caused by the ageing population and retirement. The aim is to expand the range of education and training offered by the polytechnics and to increase the number of new study places, especially in fields within the culture industry. There are no plans to expand the overall educational provision by the universities; instead, expansion in higher education will be channelled into polytechnics. The aim is to have 25 000 new study places for school leavers at polytechnics by 2004. From 2000 onwards, 250 places will be added every year, ensuring that the Government objective is reached in 2004. At that point there will be student places in polytechnics and universities for around 70% of the average 19- to 21-year-old age group.

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The rapid increase in provision in technical and technological sectors between 1998 and 2001 has mainly been motivated by the surge in labour demand in the information industry and the programme of supplementary measures introduced in response to these needs, which has increased basic capacity in the field by about 1 250 new study places. This programme will end in 2002. Most of the increase in training in tourism, catering and institutional management is because courses in tourism have only been included in this sector since 2001, and some training used to come under business and administration. In accordance with the strategies of the Government development programme, the biggest relative increase between 1998 and 2001 has been in the sector of culture, particularly focusing on training in communications to meet the needs of the culture industry.

The objective and result agreements between the Ministry of Education and the polytechnics specify the number of new study places to be offered at each polytechnic in each sector of study. By contrast, the polytechnics decide independently about their syllabus in each degree programme, within a framework of the sector's overall provision. As a basis for decision-making, the polytechnics chart the local need for training and education, using anticipation methods and by collaborating closely with business and industry. Course planning is often organised within degree programme committees on which the business world is represented.

In terms of size, the polytechnics have between 600 and 6 500 students. There are seven with under 2 000 students and eight with over 4 000. The number of new study places ranges between 245 and 1 785. One-third of all polytechnics have under 600 new study places, one-third 600-900 places and the remaining third over 1 000 places.

The specialisations of the original institutions from which the polytechnics were formed have tended to decide the degree courses that they offer. Thus, with some exceptions, the number of new study places were also "transferred" as such to the new polytechnics. Consequently, there are sometimes large disparities between the different regions in terms of educational provision.

Special attention is therefore now being focused on creating a better regional balance in the polytechnic education offered, so as to ensure a strong and well-functioning overall system and ensure equal educational opportunities. In 1999-2001, the process has specifically used the additional polytechnic allocations to help promote this balance and greater equality.

Nation-wide, new study places represented 37% of the whole 19- to 21-year-old age group. Efforts have been made to reduce regional differentials here, and in 2001 the spread is 28-50%, compared with 19-45% only three years ago. The situation is even better in Swedish-language education, where there

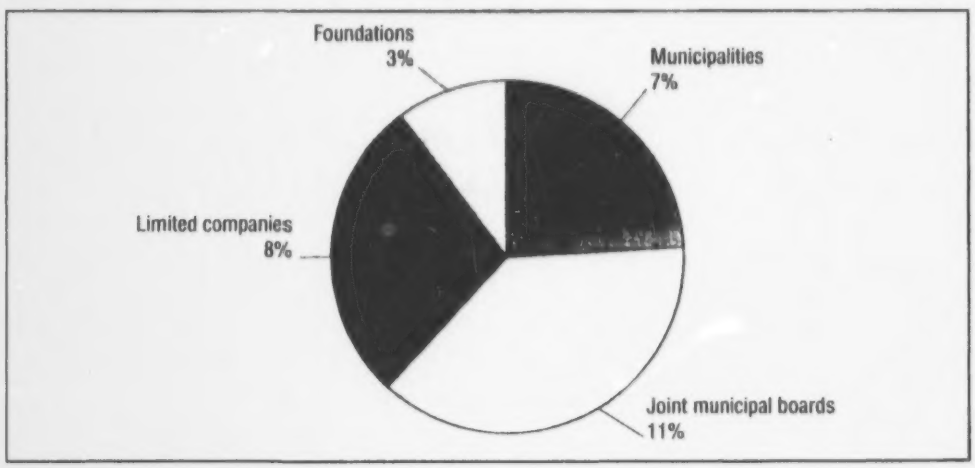
were new study places for 45% of the age group in 2000, compared with 35% in Finnish-language education.

The biggest questions related to polytechnic educational provision in the future are the overall scale of provision at the tertiary level, how to ensure equal educational opportunities everywhere, how to promote balanced regional development, and how to respond to educational needs arising from the ageing of the population and the consequent exit from the workforce.

4.2. Polytechnic administration and maintenance

Polytechnics are mainly municipal or private, as this was seen as the best way to promote the development of the institutional network and the ownership structure. Seven polytechnics are maintained by municipalities, eleven by joint municipal boards, eight by limited companies and three by foundations (Figure 4.2).

Figure 4.2. **Polytechnic maintenance**



Source: Ministry of Education.

The main issue in terms of the autonomy of polytechnics is the relationship between the maintaining administration and the internal, "autonomous" administration of the polytechnic. Another important question is the kind of organs running this autonomous administration, and how they are constituted and selected.

The administration of polytechnics, which is dealt with only in general terms in the legislation, is largely left to the organisation running them. The Polytechnics Act only provides that each polytechnic must have a board and a rector. All other matters are left to the individual polytechnic and its maintaining

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body. The legislation does not guarantee either students or staff any representation in the polytechnic's administrative organs. However, the law does state that representatives elected by the polytechnic's full-time teachers, other full-time staff and full-time students may belong to its board or other multi-member administration organ. As a result, there are considerable variations between the polytechnics as regards their administration.

The body maintaining the polytechnic usually decides on the following: the major objectives and lines of operation; the main principles of its administration and organisation; the appointment of the board and management; the procedures for adopting the economic plan and the budget; the accounting; overall payments policy; and participation in negotiations with the Ministry of Education on objectives and results.

Polytechnics themselves have autonomy concerning the following: degree programmes and syllabi; educational arrangements; degree regulations; student selection; study administration; students' legal protection; the appointment of teachers; budgetary responsibility; operational strategies (internationalisation, contacts with working life, etc.); and participation in negotiations with the Ministry of Education on objectives and results.

As debate about polytechnic autonomy has often stressed, though the maintaining administration may set up the polytechnic's autonomous administration, it may not select its members, which is a matter for the individual polytechnic. Under the principles of democracy in higher education, the majority of members of multi-member organs should represent the members of the community, i.e. teachers, other staff, and students. In view of the nature of a polytechnic, it is also advisable to include members from outside the study community. On the other hand, bodies representing the municipalities argue that each polytechnic's "background body" should be free to organise the polytechnic as it sees fit, and to decide the relative authority of the maintaining body and the polytechnic as best suits the particular situation.

From the point of view of the polytechnic's autonomous administration, it is important that, when the maintaining body approves the budget, it should give the autonomous administration the financial authorisations it needs to manage its functions independently.

The rector of the polytechnic usually represents the maintaining administration and chairs the polytechnic board. The rector also has quite broad powers in the polytechnic's internal affairs.

The municipalities and joint municipal boards maintaining the polytechnics feel some uncertainty about whether they should apply the provisions of the Polytechnics Act to polytechnic administration, or those of the Local Government Act, one reason being that the former act contains no basic provisions concerning polytechnic autonomy.

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In practice, the administrations of the polytechnics maintained by municipalities and joint municipal boards have been set up in a way that does not make a clear distinction between the administrative powers of the maintaining body and those of the polytechnic itself. When multi-member administrative bodies have been set up, they have failed to include staff and student representation in their composition and exercise of power. Staff and students often have only the right to be present and express opinions, but not to vote.

The division of administrative functions and power between the maintaining and the autonomous administrations is clearer at polytechnics maintained by private bodies, companies and foundations, even if the actual owner of the company concerned is a municipality. Obviously enough, factors related to municipal self-government contribute to the administrative differences between municipal and private polytechnics.

4.3. Steering and funding

4.3.1. *Steering systems*

The provisions governing polytechnics can mainly be found in the Polytechnics Act and Decree. The legislation deals with issues such as the status of polytechnics in the higher education system, studies and degrees, administrative principles, eligibility for studies, education free-of-charge, and teachers. The criteria according to which the Government decides to grant a polytechnic an operating license are also laid down by law.

The main policy guidelines and development targets are determined at a general level in the Government development plan for education and research which is adopted for every six years. Management by objectives and results constitutes the most important tool for the Ministry of Education in steering the operations of the polytechnics. This is strategic steering aimed at promoting the national polytechnic policy. The Ministry of Education and the polytechnics have agreed on these objectives and results since 1994. Initially, the agreements were made for one year, but now the first three-year agreement has been concluded, for 2001-2003. Funding and educational provision are decided on annually.

The agreements on targets and performance are formulated as the result of a year-round process:

- In October, a seminar is held on objectives and management by results, which is attended by representatives of the Ministry of Education, polytechnic management and the organisations running polytechnics.
- In December, the Ministry issues guidelines to help the polytechnics draw up their proposals.

- In early February, the polytechnics submit their proposals.
- In March, there is a meeting of rectors, who discuss the most important issues to be negotiated.
- The Ministry of Education gives feedback to each polytechnic individually.
- Further negotiations are held in March-April.
- In September, after the negotiations are concluded and the Government has published its budget proposal, the agreements are signed.

The structure of the agreements between the Ministry of Education and the polytechnics is as follows:

- A self-evaluation of performance.
- Objectives common to the polytechnic system as a whole.
- The mission of the individual polytechnic.
- Goals for structural development.
- Number of study places by fields of study, including adult education.
- Other development objectives.
- Internationalisation.
- Staff development.
- Library and information services and information networks.
- Relations with business and industry.
- R&D.
- EU strategy.
- Development as laid down in the operating licence.
- Resources: core funding, project funding, performance-based funding.

4.3.2. *Funding*

Polytechnics obtain almost all their financing for degree programmes from public funds, and charge no tuition fees. They also get some external funding, mainly for continuing education services and R&D. This funding makes up some 22% of their budgets.

In 2000, the income and expenditure of the polytechnics were as shown in Table 4.2.

The polytechnics receive three kinds of government funding: core, project and performance-based funding.

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Table 4.2. **Polytechnics' income and expenditure, 2000**

	All polytechnics		Smallest[1]		Largest	
	EUR 1 000	%	EUR 1 000	%	EUR 1 000	%
Income						
Establishment projects (over FIM 2 m)	22 796	3.3	0		0	
Building investments	17 054					
Other fixed assets	5 742					
Operating income, total	563 330		2 961		37 617	
Unit price financing	440 923	63.3	2 594	90.4	31 842	61.9
Sep. Government financing	26 904	3.9	145	5.0	1 780	3.5
Other funding	18 320	2.6	68	2.4	1 449	2.8
Charged services	77 183	11.0	154	5.4	2 546	5.0
Operating deficit + maintainer funding	110 343	15.9	–90	–3.2	13 817	26.8
Total income	696 469	100.0	2 871	100.0	51 434	100.0
Expenditure						
Establishment projects (over FIM 2m)	39 172	5.7	0		618	1.4
Building investments	29 894					
Other fixed assets	9 278				618	
Operating expenses, total	648 459		2 848		44 785	
Core functions	555 153	80.7	2 775	97.4	37 596	82.8
Charged services	78 359	11.4	73	2.6	3 650	8.0
Other expenses	14 947	2.1	0	0.0	3 539	7.8
Total expenses	687 631	100.0	2 848	100.0	45 402	100.0

1. Operated as permanent from summer 2000. Includes only half-year income and expenditure figures.
Source: National Board of Education.

4.3.2.1. *Core funding*

Generally speaking, the educational financing system covers both statutory funding and support for running costs and new establishment projects. This government funding is calculated on the basis of unit prices.

The main characteristics of the unit price system are as follows:

- Unit prices are determined in advance for the next year; decisions concerning educational arrangements and financing made by a municipality or other owner of an institution do not influence the unit prices.
- Actual use of funds granted is not tied to the criteria for granting and calculating them, which means that municipalities and other providers of services can make independent decisions when allocating funds for various purposes. Effectively, this in turn means that the recipient can decide how to allocate its resources within its educational system.

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- The municipalities' contribution to funding educational services (43% of total expenses) is calculated using per capita unit prices. Total expenses include the calculated expenses of educational institutions run by the municipalities, joint municipal boards, private organisations and foundations, and State-run institutions.
- The unit price is the same in every municipality.
- Statutory government subsidy is laid down for comprehensive and upper secondary schools, and for initial vocational education, polytechnic degree education, and long-term specialisation programmes at polytechnics.
- The unit prices on which the statutory government subsidy towards running costs is based are calculated per student. The subsidy is paid directly to the owner of the institution which has admitted the student.
- The unit prices are calculated once every two years, based on actual total expenses at the national level. They are higher in more costly fields of study.
- The amount which forms the basis for the following year's statutory government subsidy is reached by multiplying the totals referred to above (number of students) by the unit prices set for these totals.

4.3.2.2. *Project funding*

The Government also grants the polytechnics additional "project funding". Most of this project funding has been allocated to support the polytechnic reform (continuing education for teachers, internationalisation, library and information services, development of information networks and digital learning environments, and career and recruitment services). The intention is to shift the priority gradually to financing R&D, new development projects and individual projects, however.

4.3.2.3. *Performance-based funding*

Some funding is allocated on a performance basis according to general criteria such as efficiency and cost-effectiveness, impact, international activities, equal opportunity, and capacity for future functioning and renewal. Some performance-based funding has also been allocated to polytechnics on the basis of evaluations made by the Finnish Higher Education Evaluation Council. In 1999 these evaluations were made at centres of excellence in teaching, and in 2000 at centres of excellence in regional impact. In 2001, EUR 1.7 million was allocated on the basis of general performance criteria and EUR 1.7 million went to centres of excellence selected on the basis of the evaluations.

The Government allocates central funding for certain national projects of a permanent nature, as in the university sector. These include net connections

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and information networks, the polytechnic monitoring and evaluation database, the student selection system, and library systems.

The pilot phase in the establishment of polytechnics is now over, and all the polytechnics have operated on a permanent basis since autumn 2000. According to a survey made in 1999-2000, the polytechnic funding system is quite diversified, which must be considered an advantage. However, the polytechnics themselves criticised some aspects of the main form of funding, based on unit prices. The special rapporteur referred to earlier laid down five criteria which the funding system must meet: profitability, autonomy, steering, equity and sufficiency. The Ministry of Education appointed a committee at the end of 2000 to study the question of polytechnic funding that submitted its report on December 31, 2001.

4.4. Quality assurance and evaluation

The polytechnics are individually responsible for the quality of their educational provision and other operations, and for continuously developing them. They also have to submit themselves to external quality evaluation. In 1996, an independent expert body, the Finnish Higher Education Evaluation Council was established to assist institutions of higher education and the Ministry with matters related to evaluation.

The Ministry of Education appoints the Council for four years at a time. Its members represent the polytechnics, the universities, various sectors of working life, and students at the institutions concerned. The Council has its own secretariat for preparatory and executive work.

The aim of the Council's operations is long-range development of higher education by means of evaluation. In planning its activities, the Council consults various stakeholder groups, such as the institutions, the Ministry of Education and various organisations. Its evaluation processes are transparent, and its reports are published in its own publication series. The reports deal with the evaluation process, feedback and ideas for development, and with good practices. The Council also supports institutes of higher education when they are setting up their own quality and evaluation systems, providing expert assistance and financial support. The latter is mainly available only for Finnish and international projects involving several universities/polytechnics. The results of individual institutions' own development work are also made available to other interested universities/polytechnics through the publication series.

In its action plan, the Council sets itself the goal of providing nation-wide data allowing international comparisons related to higher education, and of ensuring right information for students, specifically in lifelong learning programmes, through a system of accreditation. These Council accreditations apply to continuing education and specialist programmes comprising at least

20 credits offered by the universities and polytechnics to supplement basic degrees.

The approach adopted by the Council is based on the principle of improving the quality of teaching and is based on nationally tailored assessments of sectors of study, degree programmes and subjects, and of various individual themes. A further principle followed is that, whenever technically possible, education and theme assessments are made simultaneously in both the university and the polytechnic sectors.

One of the Council's tasks has been to evaluate polytechnic operating licence applications and their extensions. A special section was set up at the Council for this purpose in 1996. Operating licence evaluations are made to ensure that new polytechnics and the education they provide meet the quality criteria for higher education. Each evaluation incorporates proposals for measures to develop the particular polytechnic's operations. If an experimental project fails to meet the Council's criteria, a new application has to be submitted the following year. This means that evaluation of operating licence applications comprises a process of great significance for educational development throughout the sector.

When new polytechnic operating licences are being considered the main criteria are the following:

- the operating principle (mission);
- the topicality and need for the planned degree programmes;
- how well the sectors of study fit together;
- the main area of strength;
- adequate size relative to educational function;
- the qualifications of the teaching staff;
- library and information services;
- relations with working life;
- co-operation with universities/other polytechnics, and with other educational institutions;
- international co-operation;
- educational and service function in the region;
- arrangement of evaluation;
- the learning environment; and
- the working environment.

Most of these criteria are mentioned in the Polytechnics Act.

Apart from this evaluation task, the Council has so far carried out four evaluations of polytechnic education: programmes in industrial management,

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vocational teacher training, the information industry, and health care. Evaluations are currently in progress on programmes in mechanical engineering and communications and media. Theme evaluations include the international activities of polytechnics, libraries, teaching in foreign languages, and co-operation with working life. An evaluation project is currently in progress on student guidance in higher education.

Now that individual operating licence evaluations have ended, more comprehensive evaluations of polytechnics are also being launched. The Council has also evaluated the operations of the Police Polytechnic and Åland Polytechnic, which do not come under the Ministry of Education. The Council has likewise been commissioned by the Ministry to evaluate and nominate centres of excellence in teaching in universities and polytechnics.

The Council also carries out assessments of individual polytechnics' quality projects on a voluntary basis. This function differs from quality system auditing in that each polytechnic devises the quality system that suits it best. It is then logical to evaluate the quality work carried out, to support the polytechnic's own quality development and assessment.

4.5. Monitoring and evaluation database (AMKOTA)

AMKOTA is a statistical database containing essential data on polytechnic activities, which has been developed by the Ministry of Education for its own use and that of interest groups. The data are used to develop, monitor, evaluate and steer polytechnic activities.

The data for AMKOTA are obtained from Statistics Finland, requested directly from polytechnics and transferred from other databases containing information on polytechnics. The validity of the data transferred is the responsibility of those providing it. The polytechnics update information concerning their activities directly in the database. The Ministry of Education and the polytechnics have jointly created a data-collection form and software available via the Internet.

The database contains the following sets of data:

- degree programmes;
- study places;
- applicants;
- students;
- language teaching;
- teaching in foreign languages;
- virtual studies;
- theses;

- degrees;
- teachers;
- other staff;
- international student, trainee and teacher exchanges;
- graduate placement.

The data are available by polytechnic and by sector of education. The database content is based on information generated in connection with various functions (decision-making, performance agreements, application, student selection, funding, expenditure). Statistics Finland provides annual data on students and polytechnic graduates, and on their placement in working life and postgraduate education.

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PART I

Chapter 5

Outcomes of the Polytechnic Reform

Abstract. *Chapter 5 describes the outcomes of the reforms that created the Ammattikorkeakouluts (AMKs). It considers the degree structure and degree programmes; who the students are, where they study, the pathways they follow in the system, and what they do when they leave; the role of polytechnics in lifelong learning; teachers and staff; and teaching and learning.*

5.1. Degree structure and degree programmes

The polytechnics all grant Bachelor's level degrees, comprising 160 credits (= 4 years of full-time studies) in the sectors of natural resources, technology and culture, and 140 credits (= 3.5 years) in business and administration, tourism, catering and institutional management, and health care and social services. The degree in music (under culture) demands 180 credits (= 4.5 years).

In summer 2001 Parliament passed an act on experimental postgraduate polytechnic degrees, and from autumn 2002 onwards those with a polytechnic Bachelor's degree followed by at least 3 years of relevant work experience will experimentally be offered the opportunity to complete a 40-60 credit (= 1-1.5 year of full-time studies) postgraduate degree. It will also be possible to complete this postgraduate degree side-by-side with normal work. Polytechnic postgraduate degrees are also dealt with in Section 5.3.6.

The studies leading to a polytechnic degree at the Bachelor's level are organised into degree programmes designed and arranged by the individual polytechnics, targeted at a particular job area in working life calling for professional expertise and its development. Each polytechnic submits a proposal for its own degree programmes for approval by the Ministry of Education. The Ministry decision states the name of the programme, its extent in credits, the compulsory practical training component in credits, the name of the degree, and the title that the graduate is authorised to use. The practical training is usually 20 credits, but 30 in the social welfare sector and 50 in health care. The polytechnic itself decides on the curriculum for each programme and how the courses will be arranged. The polytechnic degrees all include a diploma project, which is normally counted as 10 credits.

The polytechnic education underlines relevance to working life more than the universities. Universities focus more on academic basic research and researcher training and teaching based on theory, while polytechnic teaching and other activities serving the community rely on close links with local business and industrial development.

For courses starting in 2001 and thereafter, the Ministry has approved altogether 85 degree programmes in Finnish, 41 in Swedish and 24 in foreign languages, mainly in English.

At the start of the polytechnic reform it was considered extremely important for the experimental institutions to develop their course structures

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and content energetically. They were also encouraged to combine skills in a variety of sectors to form new kinds of multidisciplinary programmes, and polytechnics have succeeded very well in this respect. However, one consequence was that the range of variously titled degree programmes provided by the different polytechnics was at risk of becoming too great, with new programmes being added every year. The Ministry of Education decisions also included a large number of specialisation options.

Though the degree programme structure of individual polytechnics was clear enough, it was no longer clear within the system as a whole. The system was felt to be excessively complex from the point of view of the study and careers guidance given prior to entrance to polytechnics and from the point of view of working life. Both the Ministry of Education and the polytechnics also felt that such detailed regulation by the Ministry was unnecessary, particularly in the case of specialisation options.

In 1998, at the request of the Ministry of Education, the Rectors' Council of Finnish Polytechnics, ARENE, set up a degree programme project to rethink the overall structure needed. The aim was to find a structure that would effectively reflect the areas of expertise needed in working life, while allowing individual polytechnics greater freedom to profile and develop their own educational provision for those areas. The project was arranged into sectoral groups involving all the polytechnics that offered the education in question. As a result of the work done within the project, the Ministry has now approved for each polytechnic a degree programme structure that is valid indefinitely from 2001 onwards. The individual polytechnics can apply for changes in the structure if necessary.

Table 5.1 shows the number of differently named degree programmes in the various sectors of education. It also shows trends in the number of different programmes in foreign languages. In 2001 the polytechnics are offering 24 differently titled foreign language programmes, and several polytechnics have programmes with the same names. Altogether, there are 61 programmes in foreign languages. One of these is in German, and two are combined English/German programmes. The remainder is all in English.

5.1.1. *University degree structure*

The university degree system has been undergoing reform since the mid-1990s. The decisions on revising the degree programmes were made on the basis of evaluations carried out by the universities and the Council for Higher Education, the objective being to set up broad, flexible and internationally compatible programmes.

As a result of the reform, a clearly subject-based syllabus was adopted in most fields. The new degree structure usually combines studies in one main ("major") subject and in one or more subsidiary ("minor") subjects. Studies are

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Table 5.1. **Number of polytechnic degree programmes by sector, 1992-2001**

Sector of education	1992	1996	2000	2001
Natural resources				
Finnish	5	10	12	7
Swedish		1	5	6
Foreign language		2	1	1
Technology and communications				
Finnish	24	50	86	30
Swedish	5	12	18	11
Foreign language	1	8	13	6
Business and administration				
Finnish	5	11	26	8
Swedish		3	7	3
Foreign language		7	18	8
Tourism, catering and institutional management				
Finnish	5	8	14	5
Swedish		2	2	2
Foreign language		2	3	5
Health care and social services				
Finnish	3	6	25	18
Swedish		2	10	12
Foreign language		2	7	4
Culture				
Finnish	4	15	27	12
Swedish		3	8	5
Foreign language				
Humanities and education				
Finnish			7	4
Swedish			3	2
Foreign language				
No specific sector of study				
Finnish		5		
Swedish				
Foreign language				
TOTAL				
Finnish	46	105	197	84
Swedish	5	23	53	41
Foreign language	1	21	42	24

Source: Ministry of Education.

measured in credits, one credit being defined as the amount of work (average 40 hours) required from the student to attain the required objectives.

Lower academic degrees (usually called *kandidaatti/kandidat*) are first degrees of the Bachelor's level, and consist of 120 credits (minimum). Higher

academic degrees are second-cycle Master's degrees (usually called *maisteri/magister*). They consist of a total of 160 or 180 credits, or a Bachelor's syllabus plus 40-60 credits. The minimum duration of full-time studies for a lower degree is three years; for a higher degree it is five years, or a further two years following the Bachelor's degree. In practice, the median time taken to complete a Master's degree is about 6 years. In medicine, dentistry and veterinary medicine, the degrees are more extensive and take six years of full-time study to complete.

Studies in a subject (or a degree programme) are usually classified as basic, intermediate or advanced. A lower (Bachelor's) degree consists of basic and intermediate studies in the major subject, including a Bachelor's thesis, studies in one or more minor subjects, and language studies. For the higher (Master's) degree, students must complete an advanced study module and prepare a Master's thesis in addition to completing the Bachelor's syllabus (or in addition to basic and subject studies in a degree programme). Some degrees require compulsory practical training; for others it is optional.

5.1.2. *Doctoral studies*

Operation of the Finnish university sector is based on the unity of research and teaching. Scientific postgraduate education, in particular, is closely linked with the research work performed at universities and research institutions.

In the present degree structure, students can start working for a doctorate as soon as they have obtained the Master's degree. The licentiate is an optional degree, and is not offered in all fields of study. In certain cases, licentiate programmes may include specialist training. The aim of the Ministry of Education is to develop the Licentiate degree into a more professionally-oriented postgraduate degree which could be offered for adults with Master's degree and relevant work experience.

The graduate schools established in 1995 have greatly increased the opportunities for full-time postgraduate education and the number of doctorates has risen considerably. The students in graduate schools are paid and they receive top-level intensive courses and research tutoring in Finland's leading research teams collaborating through networking with other national and international research centres.

The graduate schools cover all the main areas of research. Together they form a network ranging from units concentrated in a single faculty or locality to nation-wide establishments combining the resources of several faculties.

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5.2. Students

5.2.1. *Eligibility, student selection and intake*

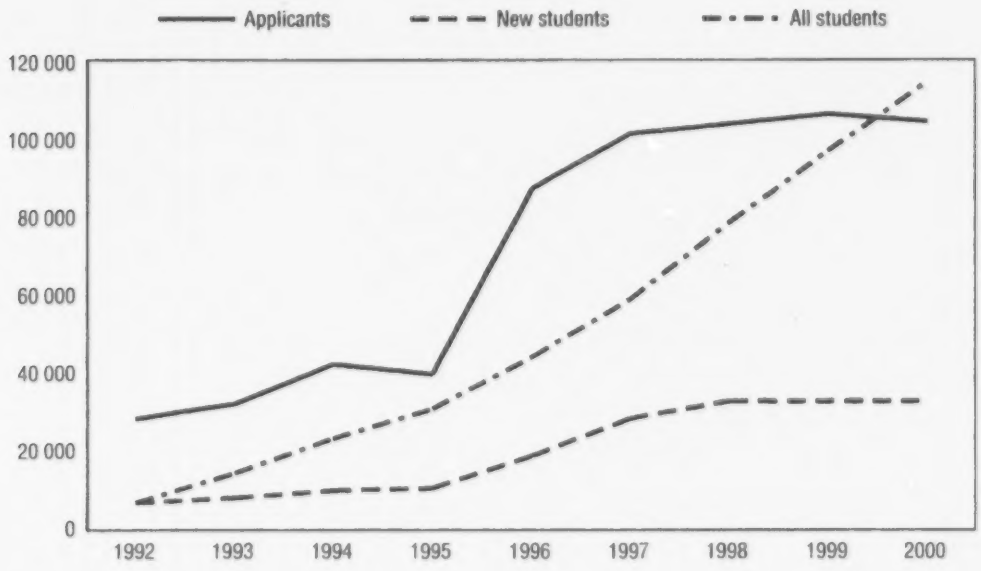
Students may apply to polytechnics after completing upper secondary education. The general qualification is completion of upper secondary school/the matriculation examination or at least three years of initial vocational education and training, or corresponding studies abroad. Vocational qualifications of less than three years or corresponding studies abroad qualify the student for that particular sector.

Each polytechnic decides on its own selection criteria, usually taking account of earlier success in studies, working experience and level of interest. In many sectors there is also an entrance examination. Qualifications required for adult studies at a polytechnic may vary more including, for example, vocational training in a given sector. The student's earlier studies and acquired skills can thus be taken into account in the arrangements.

As the polytechnic system has become established, its student figures have risen. Between 1992 and 1999 the number of applicants rose nearly fourfold, while the number of first-year students increased almost fivefold (Figure 5.1).

There were altogether 24 040 new study places at polytechnics in 2000, for which nearly 89 700 young people applied. The most popular sectors of

Figure 5.1. **Number of applicants and students in polytechnics, 1992-99**



Source: Ministry of Education, AMKOTA database.

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education were business and administration, technology and communications, and health care and social services, which also offered the most places. Applications are accepted twice a year. Far more degree programmes start in the autumn than in January, so the numbers of applications received differ greatly. There were over 116 000 applications for degree programmes starting in autumn 2000, while the figure for spring 2000 was only something over 18 000. Study places for the young are sought through a joint application procedure which allows applicants to list four preferences (Table 5.2).

The attractiveness of polytechnics varies greatly in respect of first preferences in different parts of the country. Those in the metropolitan area and other large cities benefit from the general appeal and high service standards of their locations. Differences are also found at later phases, when students move from one polytechnic to another (Table 5.2).

The appeal of different sectors of education and of individual degree programmes varies greatly. The most popular sectors are generally culture, and humanities and education. Within culture, the most popular programmes are media, design and handicrafts and applied arts. There are also some very popular programmes in technology and communications, and in health care and social services, such as IT, physiotherapy, emergency care and social welfare. Programmes responding to a specific national need for labour, where there are usually very few new study places, are also popular.

Some 4 000 new study places are also available every year in adult education. In 2000, altogether 14 520 adults applied for studies leading to a degree, two-thirds of them were women.

Students with a matriculation certificate or initial three-year vocational education are also eligible for university studies. Since the 1999-2000 academic year, the "one study place" principle has applied, which means that an applicant for higher education can only accept one study place leading to a degree in the same academic year. The aim is to ensure that as many applicants as possible get a study place. Subsequent monitoring has found that applicants are usually well aware at the application stage of the differences between polytechnic and university studies and degrees. In autumn 2000, for instance, only 21% applied both for a polytechnic and a university. 47% of all applicants applied only for a polytechnic and 32 only for a university. In autumn 1999 only 22% applied for both sectors.

At the moment, about 70% of polytechnic students have a matriculation certificate and 30% a vocational qualification. The aim is to keep the access channel via vocational education open, and to raise the percentage of such students to 35%. In 2000, 69.5% of those accepting a place had a matriculation certificate or had completed upper secondary school.

Table 5.2. **Applications and new students at the polytechnics, 2000**

	Applicants			New students			
	Men	Women	Total	% of total applicants	Total number	% of polytechnics applicants	% of total first-years
Arcada Polytechnic	759	683	1 442	1.6	433	30.0	1.7
Diaconia Polytechnic	266	1 770	2 036	2.3	671	33.0	2.6
Laurea Polytechnic	1 324	2 130	3 454	3.9	1 477	42.8	5.7
Espoo-Vantaa Institute of Technology	1 771	1 508	3 279	3.7	913	27.8	3.5
South Carelia Polytechnic	650	920	1 570	1.8	576	36.7	2.2
Haaga Institute Polytechnic	1 164	2 037	3 201	3.6	580	18.1.	2.3
Helsinki Polytechnic	2 990	5 396	8 386	9.3	1 762	21.0	6.8
Helsinki Business Polytechnic	2 276	3 893	6 169	6.9	958	15.5	3.7
Humanities Polytechnic	293	950	1 243	1.4	230	18.5	0.9
Häme Polytechnic	1 093	1 843	2 936	3.3	1 110	37.8	4.3
Jyväskylä Polytechnic	2 563	3 579	6 142	6.8	1 166	19.0	4.5
Kajaani Polytechnic	370	471	841	0.9	406	48.3	1.6
Kemi-Tornio Polytechnic	469	559	1 028	1.1	571	55.5	2.2
Central Ostrobothnia Polytechnic	650	771	1 421	1.6	726	51.1	2.8
Kymenlaakso Polytechnic	836	1 007	1 843	2.1	909	49.3	3.5
Lahti Polytechnic	1 551	2 471	4 022	4.5	862	21.4	3.3
Mikkeli Polytechnic	891	1 197	2 088	2.3	882	42.2	3.4
Oulu Polytechnic	2 722	3 915	6 637	7.4	1 390	20.9	5.4
Pirkanmaa Polytechnic	517	2 358	2 875	3.2	808	28.1	3.1
North Karelia Polytechnic	870	980	1 850	2.1	744	40.2	2.9
Pohjois-Savo Polytechnic	1 794	2 405	4 199	4.7	1 412	33.6	5.5
Rovaniemi Polytechnic	877	1 001	1 878	2.1	601	32.0	2.3
Satakunta Polytechnic	1 232	1 530	2 762	3.1	1 276	46.2	5.0
Seinäjoki Polytechnic	711	1 144	1 855	2.1	879	47.4	3.4
Swedish Polytechnic	347	310	657	0.7	395	60.1	1.5
Tampere Polytechnic	2 863	2 056	4 919	5.5	1 001	23.3	3.9
Turku Polytechnic	3 310	4 899	8 209	9.2	1991	24.3	7.7
Vaasa Polytechnic	1 013	1 209	2 222	2.5	705	31.7	2.7
Sydväst Polytechnic	213	321	534	0.6	338	63.3	1.3
Total	**36 385**	**53 313**	**89 698**	**100.0**	**25 772**	**28.7**	**100.0**

Source: Ministry of Education, AMKOTA database.

5.2.2. *The status of students and financing studies*

Students are accepted for a particular polytechnic, a specific degree programme or, in exceptional cases, directly for some specialisation option. Each student gains the right to study for the programme and degree specific to

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the first-year place concerned, and must complete the degree within the time set, depending on its extent, though up to a year of extra time can be granted. Under a new law enacted in summer 2001, students are entitled to register as absent for up to two years, and this period is not counted in the time taken for their degrees. If there is some special reason for having to prolong their studies, students can apply for an extension from their own polytechnic, which has discretionary powers in this respect.

The legislation contains no detailed provisions on the status of students within the polytechnic body. Consequently, students and student unions have no official standing within the polytechnic administration. However, student participation in the administration, and in the development of polytechnic studies, is considered vital. The polytechnics have usually arranged for student representatives to be involved in their administration, and ensure student representation separately in various development projects. Most also encourage their students to belong to a student union.

At the national level, polytechnic students belong to SAMOK, the central organisation of polytechnic student unions, through their own institution's student union. SAMOK watches over student interests by contributing to national debate on higher education policy and to development work on teaching. In summer 1999 SAMOK had about 40 000 members.

Students are also entitled to financial aid from the Finnish government, comprising a student grant, a housing supplement and a government-guaranteed study loan. This aid is intended for full-time students, so the amount received by any individual student depends on any other income they may have. The period for which it is paid depends on the extent of the degree concerned, and is the student's personal entitlement, which can be used at his/her discretion. The only precondition is that students must make adequate progress in their studies. Many students also work side-by-side with their studies, and combining government aid with earned income sometimes causes problems, as does the insufficiency of the aid when studies are protracted.

Financial aid is granted for the duration of full-time studies but is subject to a maximum of 70 months. At universities, financial aid is granted for 55 months for studies towards a Master's degree. At polytechnics financial aid is available for 45 to 55 months depending on the extent of the degree. The remaining time up to 70 months can be granted for other higher education studies. The average study grant and housing allowance have been EUR 404 per month in recent years. The amount of the student loan was EUR 219 per month.

Financial aid for adult education is granted to students aged 30 to 54 for up to two years. The size of the study grant for mature students depends on the student's income level before starting to study, but ranges from EUR 259 to EUR 471. In 1999, 1 650 mature students received study grants.

Foreign students may qualify for financial aid if they have resided in Finland for a minimum of two years for purposes other than study, or if they have a permanent residence permit in Finland. Finnish students may also receive aid for studies abroad, provided that the studies correspond to Finnish studies that would be covered by the financial aid provisions, or for part of a Finnish degree programme. In 1999, 5 227 students received financial aid for higher education studies abroad.

Consistent efforts have been made to provide reasonably priced rental accommodation for all students in need of it. Construction has been financed mainly by State-subsidised low-interest loans; local authorities have also encouraged housing production by making land available free of charge or on reasonable lease terms. Housing is also available for foreign students.

5.2.3. *Dropping out and changing discipline*

Since autumn 2000, students at polytechnics have had to register as present or absent at the beginning of the academic year or particular programme. Absence is possible for up to two years without affecting the statutory study period. The main reasons for such temporary absence among polytechnic students are performance of military service, maternity or care leave, and periods at work.

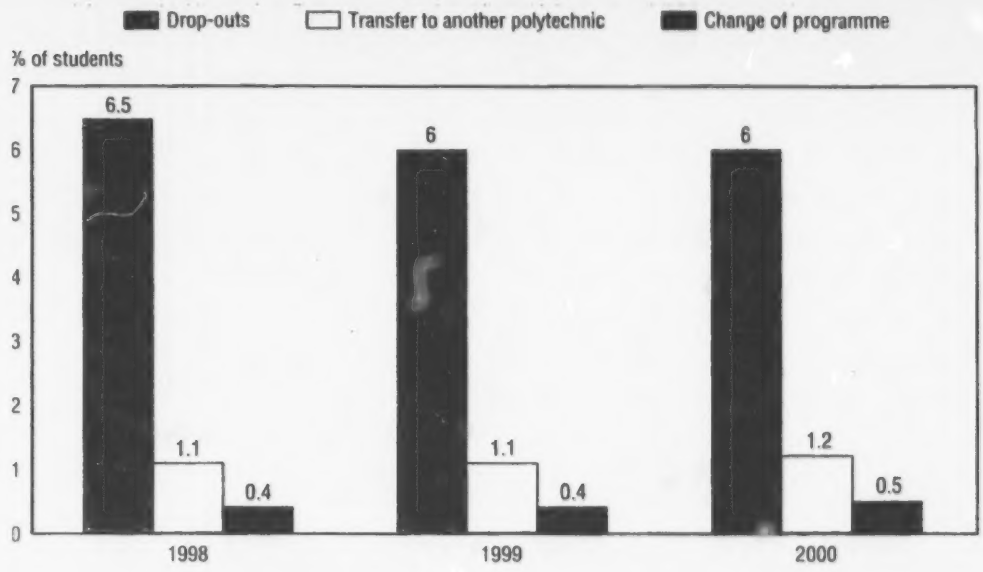
In 2000, about 6% of all students dropped out of polytechnic studies, 1.2% of all polytechnic students transferred to another polytechnic, while 0.5% changed their study sector or programme within the same polytechnic. Statistics have been kept on the reasons for dropouts since 1998 (Figure 5.2).

In 2000, 22% of dropouts from polytechnics went on to study at university, a vocational or other institution, or abroad, with university being the most popular, attracting 13% of dropouts. 20% dropped out in order to take up a job. It is difficult to discover the real reason for dropping out if the student does not wish to give it, and no reason is given in over half of all cases (Figure 5.3).

The dropout rate varies from one polytechnic to another, and the Ministry of Education uses the rate as one criterion for granting performance-based funding. There are also differences between sectors of education. Students drop out less frequently in the humanities and education (2.4% in 2000), health care and social services (4.5%) and culture (4.7%). The rate is above average in technology and communications (6.9%) and business and administration (6.8%). In natural resources and in tourism, catering and institutional management, the most common reason is to take up a job. Transfer to university is one key reason in humanities and education, culture, and business and administration.

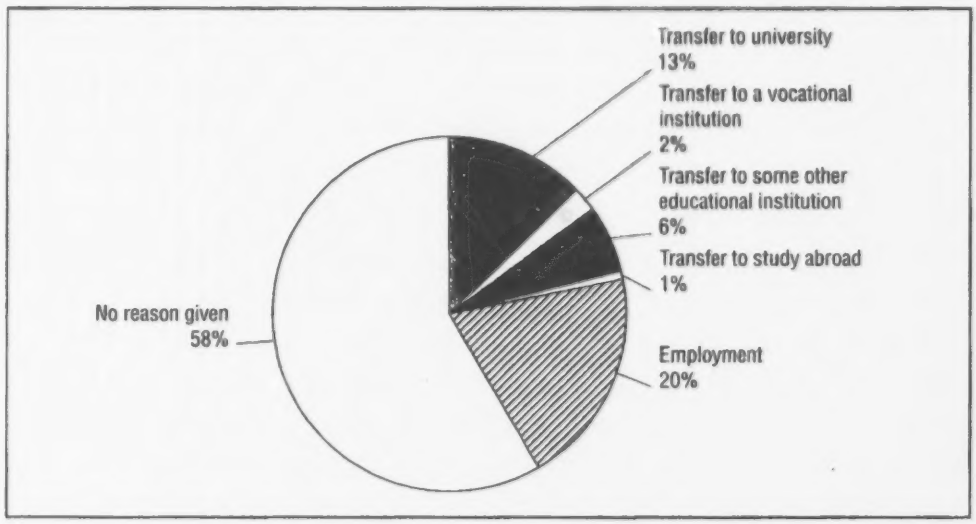
The Institute for Educational Research at the University of Jyväskylä has studied reasons for dropping out from polytechnics, using a questionnaire addressed to the heads of sector at polytechnics. The main reasons reported

Figure 5.2. **Dropouts and changes of polytechnic or degree programme among polytechnic students, 1998-2000**



Source: Ministry of Education, AMKOTA database.

Figure 5.3. **Reasons given for dropping out of a polytechnic, 2000**



Source: Ministry of Education, AMKOTA database.

were that students took up jobs, preferred to study at university, or proved to have chosen the wrong sector. One common feature was lack of motivation, though dropouts included students who had succeeded both well and poorly in

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their studies. In technology, particularly, one important reason for dropping out seemed to be poor academic success and insufficient mastery of mathematics. One aspect of the rapid increase in first-year places in the technology sector is that many of its students really wanted to study something else. The survey showed that most dropouts occur during the initial phase of studies.

Another finding was that the polytechnics are not always fully aware of the problems that lie behind a decision to drop out. More thorough investigation of reasons and consultation with students are therefore required. The best way of preventing unnecessary dropouts was considered to be better student guidance, especially at the beginning. Another approach would be to improve the structure of degree programmes to ensure more practical instruction initially. Better teaching and consistent high quality were also felt to be important. In the student selection procedure, the heads of sector underlined the importance of establishing applicants' motivation and thorough testing of their commitment to the sector concerned.

According to the Government-approved development plan, "With a view to ensuring a flexible education system and students' legal rights, it is essential that prior studies are recognised in an adequate and fair way when students transfer from one sector of higher education to another. The recognition of prior studies is a task for the higher education institutions. When a graduate transfers from one sector of higher education to another, the aim is to count about half of studies in the same field towards the second degree." Each university and polytechnic, however, decides on the recognition of prior studies. This is often done to a far lesser extent than recommended by the Government.

5.2.4. *Student exchanges*

The polytechnics have expanded their international activities very rapidly, partly thanks to conscious efforts to promote internationalisation, such as the development funds granted by the Ministry of Education, and specifically the opportunities to take part in EU exchange programmes opened up by Finnish membership of the Union. These find reflection in a constant increase in student and teacher exchanges and in the growing number of programmes and courses in foreign languages.

In international co-operation, a key role is played by agreements with institutions of higher education abroad and consequent opportunities for students to spend time at foreign universities and other institutions. Trainee exchanges have also come to be an important part of international activities. The polytechnics' international co-operation networks were initially specific to individual institutes and sectors, and international operations focused for a long time on student and teacher mobility within degree programmes.

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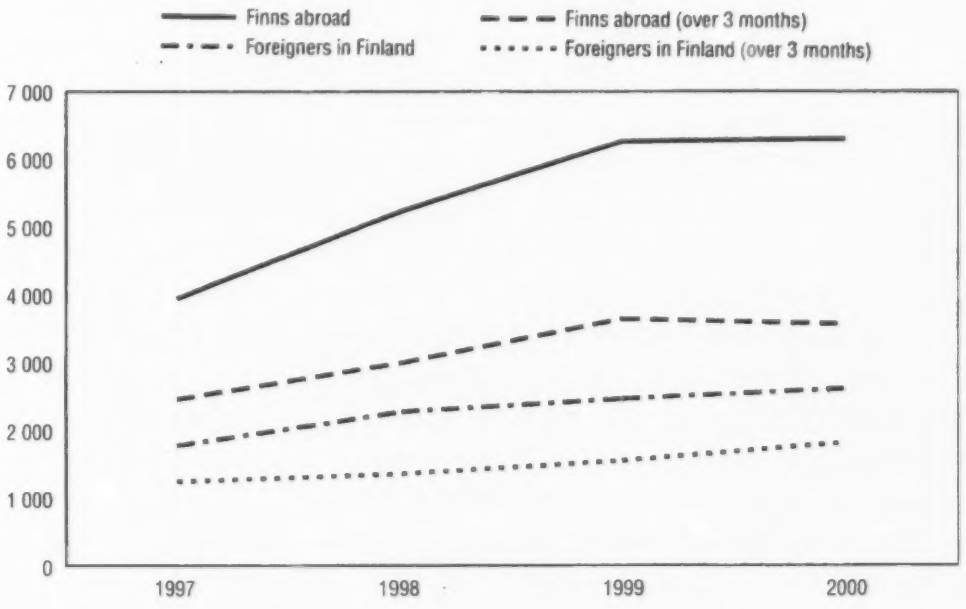
Students can apply to study abroad through their own polytechnic's exchange programmes, or independently apply to a foreign institution direct. Finnish students also get financial aid from the government to study abroad. In addition, various exchange programmes provide small grants for students going abroad on student or trainee exchanges.

International co-operation in education aims to raise the quality of education and provide students with study opportunities abroad. International exchanges have made students more internationally minded, and improved their language and communication skills. The objective of the Government development programme is that at least one-third of all students in higher education should complete part of their degree studies abroad. Student and trainee exchanges at the polytechnics aim especially to increase the proportion of long-term exchanges lasting over three months.

Rapid progress has been made in such student mobility at polytechnics, and the number of students involved in various kinds of exchanges rose rapidly, by a total of over 2 000, up to 1999. Since then, the increase seems to have levelled off, however (Figure 5.4).

Efforts have also been made to increase the number of exchange students coming to Finland, and the total has in fact risen steadily. The long-term objective is to achieve reciprocity in student exchanges. The joint development targets for

Figure 5.4. **Student exchanges in polytechnics, 1997-2000**



Source: Ministry of Education, AMKOTA database.

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polytechnics in 2001-2003 aim to raise the number of foreign exchange students to 4 000 a year.

In autumn 2000 the Finnish Centre for International Mobility and Exchange did a survey of exchange students at polytechnics and universities which established why they had chosen specifically Finland as a country to study. The respondents underlined the appeal of the large number of courses available in English, the good reputation of Finland's higher education institutions, opportunities for studies not available in their home country, specialist know-how in areas of technology and industrial design, and particular interest in Scandinavian countries.

In 2000 the polytechnics engaged in student and trainee exchanges with nearly a hundred foreign countries. Altogether 6 300 students studied or did trainee work abroad. Just over half of these exchanges were periods of over three months. Most Finnish polytechnic students went to Britain, Germany, Sweden and Russia. 2 600 foreign students studied and did trainee work in Finland, mostly from Germany, France, Russia, Britain and the Netherlands.

The number of students on university exchanges rose throughout the 1990s, but has levelled off in recent years, as have polytechnic exchanges. However, it is significant that polytechnic students have participated just as actively as university students in international exchanges recently. In 2000 only something over 400 more university students than polytechnic students took part in exchanges lasting over three months. By contrast, the number of foreign students at Finnish universities is still higher than those at polytechnics. The volume of both incoming and outgoing exchange students at universities has levelled off considerably recently (Figure 5.5).

A recent survey showed that students value the opportunity offered by international exchange programmes to learn about their own profession abroad, to increase their knowledge and skills in a multicultural environment, to gain added familiarity with their degree programme content, and to enhance their vocational skills. The importance of international student co-operation is also growing in inter-polytechnic activities.

5.2.5. *Graduation*

Completing a polytechnic degree takes 3.5 to 4.5 years of full-time study. According to the national decree on polytechnics, the polytechnic must arrange its courses so that students can graduate in that time, and students, in turn, must complete their degrees within the period set, plus a maximum of one extra year. Earlier studies approved and recognised by the polytechnic or special summer study courses may shorten the time taken to graduate.

In 2000 the average completion time of studies was 3.9 years. No major changes have taken place in recent years, though some differences have

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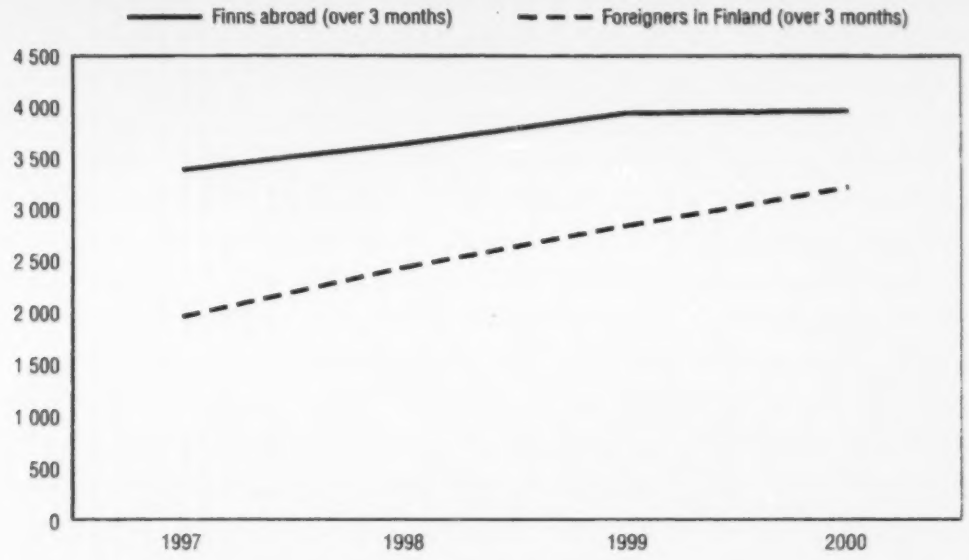
Figure 5.5. **Student exchanges in universities, 1997-2000**



Source: Ministry of Education, AMKOTA database.

emerged between sectors of education. The longest study periods are in natural resources, culture, and technology and communications, while students of health care and social services, and of humanities and education complete their studies more quickly than average.

In 1995-2000 nearly 44 000 degrees were taken at the polytechnics. The number has risen steadily with the expansion of the polytechnic system: in 1995 the total was less than 2 000, but had reached well over 14 000 by 2000 (Figure 5.6).

A sectoral study of polytechnic degrees shows that most have been in health care and social services, business and administration, and technology and communications. In 2000, women accounted for 65% of all polytechnic degrees taken. There is considerable gender segregation in health care and social services and in technology studies at Finnish polytechnics, as there is in other education, and this is reflected in the degrees taken. In 2000, men accounted for only 8% of polytechnic degrees in health care and social services, while women accounted for only 18% of technology and communications degrees the same year (Table 5.3).

Some 16 800 degrees were taken at the universities in 2000, and the total has ranged between 16 000 and 17 000 during the last few years. Women account for 59% of all university degrees. Most university degrees were Master's, and the percentage of Bachelor's degrees has remained low. The

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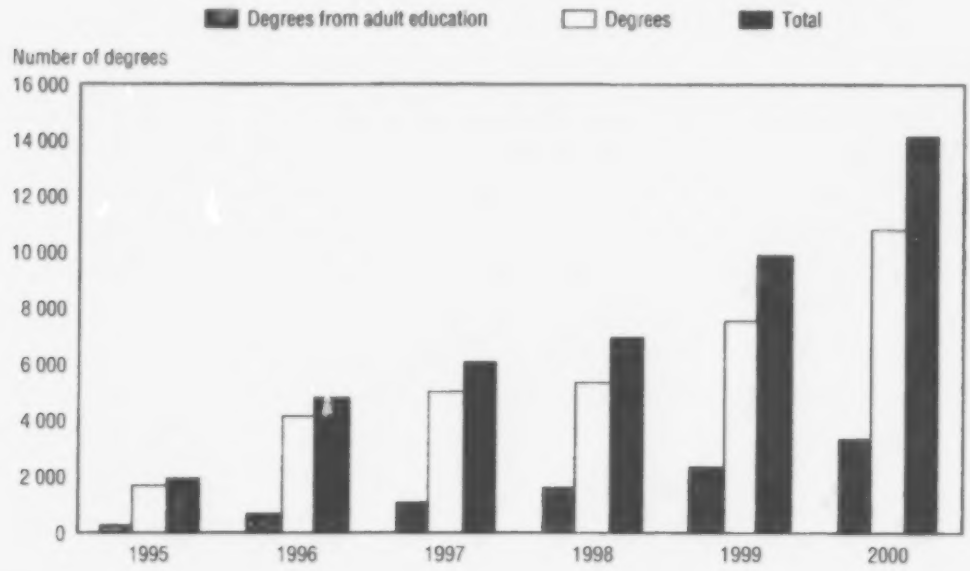
Figure 5.6. **Degrees taken at polytechnics, 1995-2000**



Source: Ministry of Education, AMKOTA database.

Table 5.3. **Polytechnic degrees by sector of education, 1999-2000**

	1999			2000		
	Men	Women	Total	Men	Women	Total
Natural resources	181	146	327	251	254	505
Technology and communications	2 095	509	2,604	2 943	658	3 601
Business and management	886	2 077	2 963	1 180	2 716	3 896
Tourism, catering and institutional management	39	301	340	67	393	460
Health care and social services	231	3 002	3 233	382	4 507	4 889
Culture	87	329	416	167	563	730
Humanities and education	1	12	13	13	59	72

Source: AMKOTA database.

average time taken to complete a Master's degree in 1996-1999 was 6.5 years, but there is considerable sectoral variation. The average time is exceeded in sectors such as technology, the humanities, and agriculture and forestry, while degrees in commercial sectors take a shorter time than average, i.e. 5.5 years (Figure 5.7).

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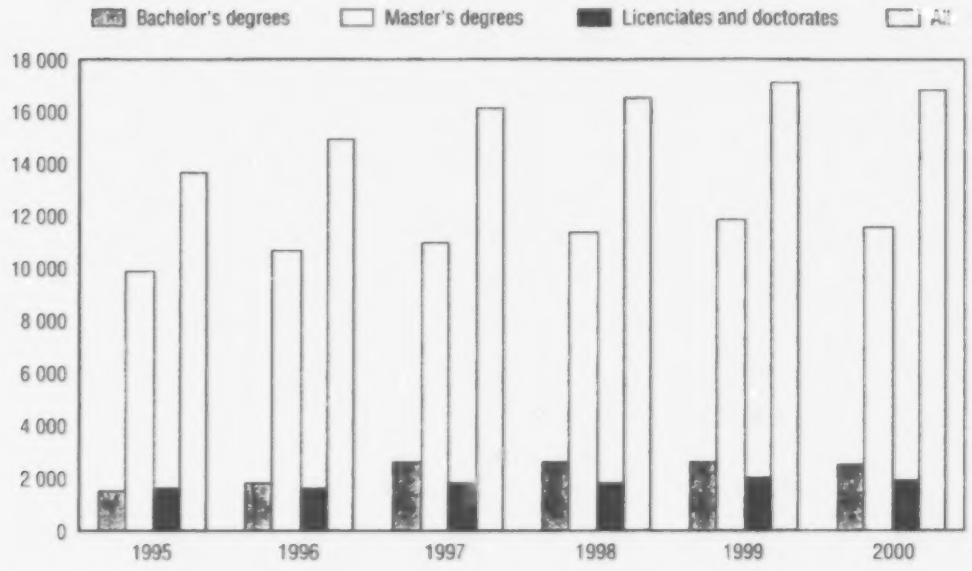
Figure 5.7. **University degrees, 1995-2000**



Source: Ministry of Education, KOTA database.

Reducing the time taken to graduate and raising the completion rate are key objectives of the Government's higher education policy. One of the targets of its development programme for education and research is for 80% of polytechnic students to gain a degree in the required time and 75% of university students to complete a Master's in five years.

Calculating completion times using successful graduates does not give a comprehensive picture of the effectiveness and functioning of the higher education system, however, and the progress made with all students' studies should be reviewed. Polytechnic student and degree figures have risen rapidly in recent years because of the progress of the reform, and this makes it difficult to assess the actual completion rate. Individually-based statistics are currently being compiled for this purpose, however.

5.2.6. *Graduate placement*

Polytechnic graduate placement in working life is monitored, primarily using a register of placements produced by Statistics Finland which monitors people's main activity at the end of the year. This material gives a comprehensive picture of the placement of all graduates in working life, unemployment, and any further studies or other activity, but has the disadvantage of always being a year behind the times.

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The Ministry of Education uses data on graduate placements as one criterion for granting performance-based funding to the polytechnics. Job placement is assessed sector by sector, relative to other polytechnics. Any change compared with the previous year is also noted. This makes it possible to take account of the different conditions in various parts of Finland and allows a clearer picture to be gained of the effect of the polytechnic's own activities on the employment rate.

At the end of 1999, 75.5% of all polytechnic students graduating in 1995-1999 had found jobs, 12.1% were unemployed, 6.6% were still studying, and the remaining 7.6% were doing military service, were mothers at home or had emigrated. Of those in jobs, 73.7% were wage earners and 2.2% entrepreneurs. Analysed by sector of education, the most successful in finding jobs were graduates in technology and communications (85.8%). The lowest employment rate (61.1%) was among health care and social services graduates. The number of entrepreneurs among graduates also varied from sector to sector, most being found among natural resources (12.8% of the total) and culture graduates (6% of the total).

Any analysis of polytechnic graduate placement must note that some 1999 graduates did not actually complete their degrees until the very end of the year, so had no time to look for a job. In the statistics, this fact is reflected in the high percentage of unemployed (Figure 5.8).

The longer the time from graduation, the more easily people find jobs. At the end of 1999, 82.6% of those who graduated from polytechnics in 1997 had found jobs, while only 6.3% were unemployed and 4.7% were still studying. At the same date, 72.7% of 1997 graduates in health care and social services and 89.7% of technology and communications graduates were employed.

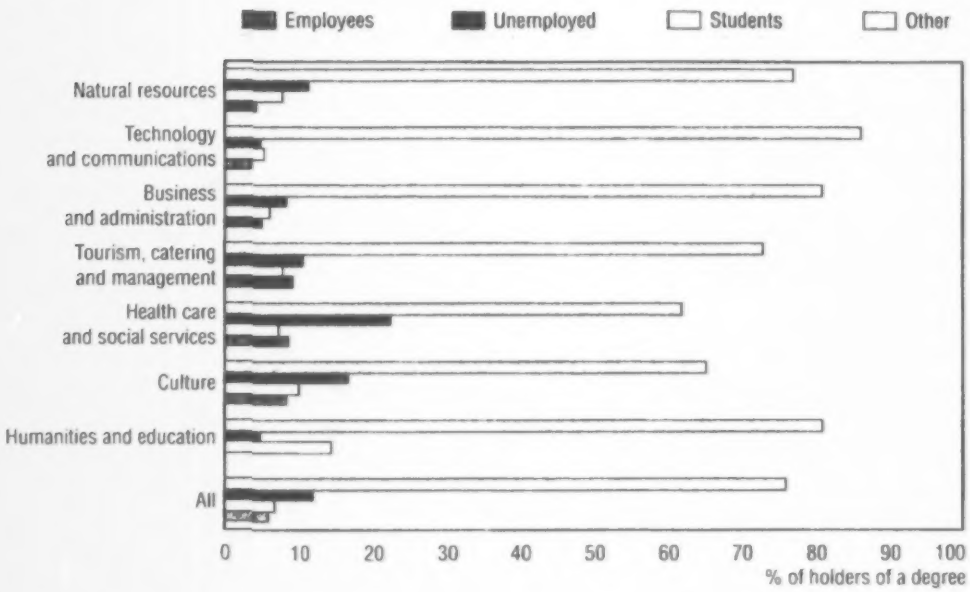
Academic unemployment has declined in Finland in recent years. Tables 5.4 and 5.5 show the main activity of holders of university Master's degrees and polytechnic degrees at the end of the calendar year following graduation. The number of polytechnic graduates before 1996 was so low that they are not included in the comparison.

Table 5.4. **Main activity of holders of Master's degrees one year after graduation**

Graduation year	Total degrees	Wage-earners	Entrepreneurs	Students	Others	Unemployed
1995	9 784	77.6	1.5	7.5	7.2	6.2
1996	10 227	81.8	1.3	7.7	3.8	5.3
1997	10 661	83.2	1.7	6	4.9	4.2
1998	11 306	83.3	1.1	5.1	5.1	3.7

Source: Ministry of Education, AMKOTA database.

Figure 5.8. **Main activity at the end of 1999 among polytechnic graduates (1995-1999)**



Source: AMKOTA database.

Table 5.5. **Main activity of holders of polytechnic degrees one year after graduation**

Graduation year	Total degrees	Wage-earners	Entrepreneurs	Students	Others	Unemployed
1996	4 541	75.5	2.1	6.8	5.1	10.4
1997	5 868	77.8	2.3	5.3	5.2	9.4
1998	6 912	78.3	2.1	5.4	6.5	7.8

Source: Ministry of Education, AMKOTA database.

Holders of Master's degrees from university seem to find jobs more easily than polytechnic graduates, especially graduates in medicine and technological sciences, where the unemployment rate is under 2%. Graduates in drama, dance and art find it most difficult to get jobs. A larger proportion of polytechnic graduates than university graduates end up as entrepreneurs. In 1999 just over half of the previous year's university graduates who had found employment were working for central and local government. By contrast, about 74% of employed polytechnic graduates had jobs in the private sector. Some 20% of polytechnic graduates with jobs in the public sector worked for municipalities and only some 5% for central government.

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The new polytechnic degrees first gave rise to some questions in the labour market. Employers did not know what exactly they were and what competencies the graduates had. The situation has improved in recent years.

A University of Jyväskylä research project analysed placement of polytechnic graduates in business, technology, and health care and social services. The graduates involved said their training gave them a wide range of skills and good potential for finding jobs. In particular, they considered that joint projects, on-the-job training and diploma projects between the polytechnics and local business and industry helped them with the transition to working life after graduating. Over 90% of the respondents thought that they would probably be in paid employment five years after graduating. The placement of polytechnic graduates in the labour market is monitored by means of surveys and other studies, most of which are based on the graduates' own views of the nature of their jobs.

The placement of polytechnic graduates in different parts of the country is dealt with in Chapter 6 (Section 6.1, "Regional impact").

5.3. Lifelong learning and adult education

In the 1990s, adult education was used in Finland as a way of raising the population's educational level and of improving skills and knowledge in response to the changes going on in working life and leisure. The mass unemployment suffered in the 1990s and its consequences – specifically marginalisation trends from the main arenas of modern society – face the adult population with particular demands. On the other hand, Finland is an ageing society, which poses new challenges to the adult education system. Not the least of these is the rapid advance of new communications and information technology into most areas of public life.

Side-by-side with these social challenges, Finnish adult education has been strongly influenced by the principle of lifelong learning. This should be understood broadly, as a principle guiding educational policy which covers the whole span of life and all levels of education, from pre-school to old age. It means that government and interest groups influencing education are pursuing a *policy of learning promotion* that offers the individual the potential for intellectual, aesthetic, moral and social growth, promoting the acquisition of information and knowledge throughout life and in various different operating environments. In addition, organisations (work communities and NGOs) are arranging their operations so as to promote learning, while the learning *content* embodies support for personal development, endorsement of democratic values, maintenance of social cohesion and promotion of innovation and productivity.

Finnish adults have quite a high level of education by international standards. An OECD comparison in 1998 showed that 68% of Finnish 25- to

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64-year-olds had completed at least upper secondary education, against an OECD average of only 61%. On the other hand, the percentage of those with a tertiary type A education[1] in the same age group (13%) was slightly below the OECD average (14%). However, the education breakdown among the Finnish population is marked by great differences between age groups. These make it quite difficult to raise the overall level of competence, education and skill, especially among older adults.

According to an international literacy survey published in 2000, Finland comes second, after Sweden. The more formal education a person has, the higher his level of literacy.

In spring 1995, the Government declared that its general education policy strategy was to raise the educational level of the whole population in accordance with the principles of lifelong learning. Various documents setting Government targets and objectives have since outlined concrete ways of raising the educational level and skills of the adult population. By providing education for the whole nation, the Government aimed to safeguard the capacity of the individual, society and business life equally to respond to international challenges and the new emphasis on the importance of knowledge and information. The nation's ability to respond to change was viewed as depending essentially on its basic education, special skills and creativity.

5.3.1. *Forms of adult education and adult participation in education*

Adult education is quite extensive in Finland. As a concept it covers adult education aiming at a degree at any level, general liberal education, and what is usually, in the European context, called "labour market training". In all cases, it is education and training for people of working age. It includes teaching leading to a basic qualification at all levels, component studies forming part of a degree or qualification, training for competence-based examinations, apprenticeship training, supplementary and continuing education to update and extend vocational and professional skills, social studies conferring civic and work community skills, and study purely for recreation.

The vocational and other education offered by Finnish institutions is not tied to age, and anyone with the desire and opportunity can take part.[2] Though access to adult education is "age-neutral", tailored courses to meet the special needs of adults are common. There are some mature students on courses intended for young people, most of them at institutes of higher education, *i.e.* universities and polytechnics. Indeed, some 51% of students doing basic degrees at universities, and 43% of those doing undergraduate courses at polytechnics are over 25. Adult learning totally outside educational organisations is also common in Finland (Table 5.6).

Adult education is provided at roughly 1 000 institutions, including every polytechnic. It strives to take the student's former qualifications, skills and work

Table 5.6. **Number of training organisations which can arrange education and training for adults**

Adult upper secondary schools and courses	54
Summer universities	20
Study centres	11
Physical education courses	14
Music institutes	89
Various specialist institutes	54
Vocational adult education centres and national specialist institutes	45 + 8
Vocational institutes	382[1]
Polytechnics	29
Universities	20
Civic colleges	274
Folk high schools	91

1. About 200 bodies maintaining vocational institutes.
Source: Ministry of Education.

experience into account. Consequently, it is usually possible to complete adult education degrees in a shorter time. All in all, there are well over three million attendees at adult education courses every year, and some 12.5 million hours of instruction.

By international standards, Finnish adults are eager to educate themselves. About 57% of all 25- to 64-year-olds have taken part in some kind of organised education in the previous 12 months.

Adult education is attended by 20% of the population annually. This compares with 43% of the workforce who participated in job-related education in 1995, some 40% of which was self-motivated rather than employer-determined. Workers' institutes gained a real hold in Finland, unlike Sweden, where the idea originated. Traditionally, therefore, there has always been a strong emphasis on the educational needs of workers. This is still in evidence today in the weight given to adult vocational education. Perhaps the most striking feature of adult learning today is the regulated market, heavily subsidised by the Government and regional administrations. There is a marked absence of the thriving commercial provision that characterises learning opportunities for adults in many other OECD countries.

Between 1980 and 1995 the number of participants in adult education increased from 600 000 to 1.6 million, mainly due to rising participation in vocational education. Present policy expects adults to respond to globalisation and technical change, and to automatically renew their skills.

Appreciation of the Finnish situation should be seen against the background of its performance in relation to other OECD countries (Table 5.7). On overall learning participation, regardless of job status, Finland performs

Table 5.7. **Participation in learning of 25-64-year-olds according to type of training and job status, 1994-98**

Percentage

	All job status	Employed	Unemployed	Out of the labour force
All types of training				
Germany	18.1	23.2	26.7	6.9
Australia	35.6	42.2	28.3	16.1
Belgium (Flanders)	21.5	26.8	16.6[1]	9.8
Canada	36.4	41.9	30.1	23.1
Chile	19.1	22.0	22.9	11.1
Denmark	56.2	60.7	51.1	39.0
United States	41.5	48.5	30.2[1]	16.9
Finland	**58.2**	**69.9**	**29.4**	**32.1**
Hungary	18.1	27.7	9.5[1]	2.2[1]
Ireland	22.0	29.4	8.6[1]	14.5
Netherlands	36.3	43.2	38.8	21.8
Norway	48.4	54.1	33.2[1]	21.8
New Zealand	46.4	53.1	31.4	29.7
Poland	14.1	20.5	7.9[1]	2.8
Portugal	13.0	16.7	9.8[1]	4.7[1]
Czech Republic	27.2	33.5	14.3[1]	7.8
United Kingdom	44.9	56.0	33.1	14.3
Slovenia	33.3	42.9	13.7[1]	10.5
Switzerland	41.5	45.7	32.3	27.3
Sweden	54.3	60.1	45.6	28.7
Average	***34.9***	***42.8***	***26.4***	***13.6***
Job-related training[2]				
Germany	14.9	20.1	25.1	3.1[1]
Australia	30.3	38.1	23.8	6.9
Belgium (Flanders)	14.0	19.8	8.6[1]	0.9[1]
Canada	29.6	37.5	22.0	9.9
Chile	11.7	17.0	9.3[1]	2.5[1]
Denmark	48.7	54.6	38.8	26.9
United States	37.6	45.2	28.5[1]	10.1
Finland	**40.0**	**51.1**	**11.6**[1]	**15.8**
Hungary	12.8	19.8	6.1[1]	1.4[1]
Ireland	15.8	23.5	7.1[1]	6.6
Netherlands	24.1	32.5	29.4[1]	5.9
Norway	44.4	50.9	26.7[1]	14.5
New Zealand	38.4	46.9	24.1	16.3
Poland	10.6	16.5	2.4[1]	1.1
Portugal	–	–	–	–
Czech Republic	21.7	27.3	11.9[1]	4.4[1]
United Kingdom	39.7	51.8	24.0	7.0
Slovenia	25.6	34.4	9.1[1]	4.4[1]
Switzerland	26.3	31.8	26.9[1]	6.0
Sweden	–	–	–	–
Average	***29.3***	***37.6***	***21.4***	***6.9***

1. Less than 30 cases in the cell.
2. Not available for Portugal and Sweden.

Source: International Adult Literacy Survey (IALS) – Second IALS (SIALS) (prepared by the authors).

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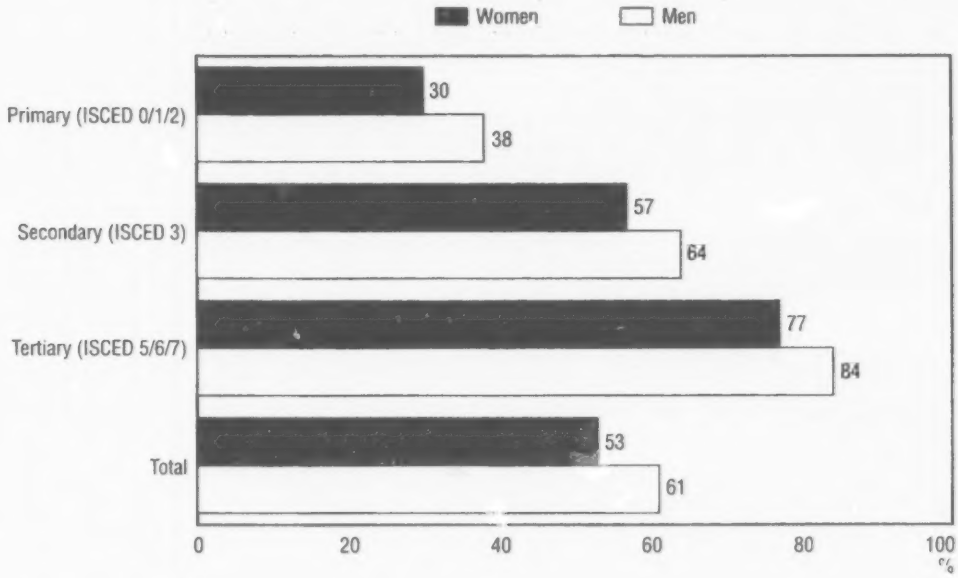
Figure 5.9. **Participation of 25- to 64-year-olds in adult education, by level of basic education (ISCED 76) and gender, 1998**

Attendance during the previous 12 months



Source: International Adult Literacy Survey (IALS).

best. Curiously though, when one looks at job-related training it comes out third from the top overall (with 40%), though at least part of the explanation for the discrepancy lies in the fact that overall adult education numbers are bloated by initial education students who start their studies later than average.

Participation in adult education varies greatly from region to region. Those living in southern Finland participate most and those living in Lapland least. The finding that there is such regional inequality reflects the fact that adult education is targeted at specific population groups. As by far the majority of all adult education comprises participation in staff training supported by the employer, and specifically concerns higher trained personnel groups in positions of authority, regional inequality reflects differences in the distribution of industry, and in the educational level and vocational structure of the population, in various parts of the country. If we look at participation in other than work-related adult education, the differences decrease. However, there is on average less participation in northern Finland than elsewhere, and this may indicate problems connected with the supply.

5.3.2. *Degree and non-degree-oriented education*

Basic university degrees are not arranged separately for adults and young people, and all students study for the same degrees irrespective of age. In fact,

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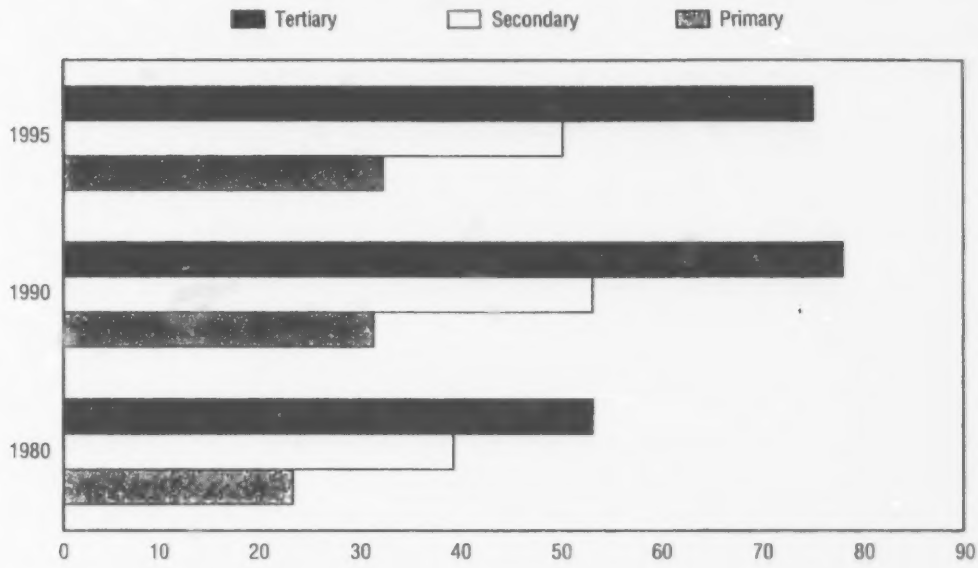
Figure 5.10. **Participation in adult education in 1980, 1990 and 1995, by previous education (%)**



Source: Blomqvist, Kskinen, Niemi and Simpanen (1997), *Aikuisopiskelu Suomessa – Aikuiskoulutustutkimus* 1995, Helsinki.

the majority of the overall student population (about 51%) are adults (25 or over), and adults even account for 18% of first-year university students.

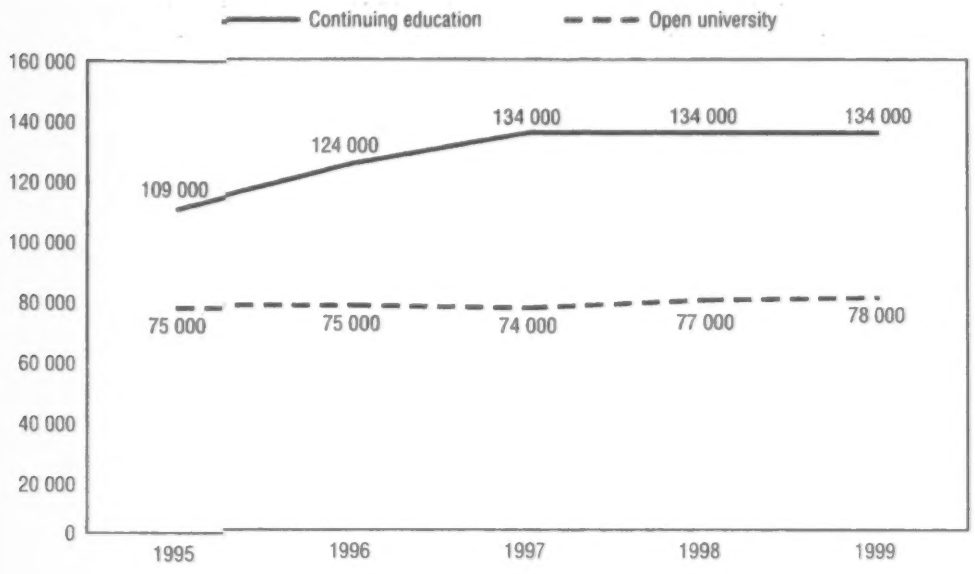
Unlike the universities, the polytechnics provide degree programmes for adults, which account for about a fifth of their total provision.

Both the universities and the polytechnics arrange open education available to all at basic degree level. The open university instruction is already well established, but the open polytechnic only started in the late 1990s. Anyone who wishes to study can do so, regardless of age and previous education. It is possible to complete individual parts of degree courses. Students with certain number of credits from open university are eligible for regular university degree courses.

A large number of people over 25 take basic university degrees. In actual fact, continuing education and the open university are considered to be the forms of adult education provided by the universities, but this is more of an administrative definition, as the open university has become a very popular form of studying among young people (Figure 5.11).

The universities' centres of continuing education mostly provide opportunities for academically trained people to update and broaden their professional skills without aiming at any degree. They also arrange specialisation courses which supplement the universities' degree systems and further

Figure 5.11. **Student numbers on continuing education and open university courses provided by universities, 1995-99**



professional development. These comprise at least 20 credits and are available to graduates and others with an adequate existing base for the required studies.

Adults can also take specialisation courses at a polytechnic. These are extensive continuing education programmes designed to promote professional development which are arranged for holders of a degree, a vocational diploma or other vocational tertiary-level qualification, and other individuals with an adequate existing base for the required studies.

5.3.3. *Adult education at polytechnics*

Quite soon after they started operating, the polytechnics adopted adult education as one of their basic functions, and polytechnic adult education is now the most extensive form of adult education. Today, about one-fifth of all courses leading to a polytechnic degree are aimed specifically at adult students. Student numbers have risen every year and at the moment the polytechnics are unable to increase their provision to meet the demand because of the stringent budget.

All the polytechnics arrange the same education leading to a degree for adults as for young persons. In practice, a large proportion of mature students already have a diploma from a vocational institute or some other upper secondary qualification, and are taking supplementary courses to upgrade earlier qualifications to a polytechnic degree.

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Over one-fifth of all polytechnic places, i.e. around 18 600 study places "full-time equivalent" (FTE is a statistical term equal to 40 credits; a 20-credit period of specialisation studies equals half a year-student), are in adult education. Some 14 600 of these student places are in adult education leading to a polytechnic degree, and 4 000 doing professional specialisation courses.

A large number of mature students attend courses aimed at a polytechnic degree which are intended primarily for the young.

As well as their degree programmes for adults, the polytechnics also arrange professional specialisation courses of 20-40 credits for adults who already have a degree. These are mostly in the sectors of technology and health care. Some 2 900 students were taking professional specialisation courses at the end of 1999, but by 2000 the figure was already nearly 5 400 students.

The polytechnics can also arrange other continuing education, for instance as a charged service for companies and work communities.

5.3.4. *The open polytechnic*

It is possible to take individual courses contributing to a polytechnic degree at the open polytechnic. This is intended for everyone with an adequate existing basis for completing the required studies, regardless of their previous formal education. Students who want to complete a whole degree must apply for admittance at the polytechnic via the normal application procedure. If they are accepted, the polytechnic concerned credits the courses already completed at the open polytechnic.

All polytechnics already offer at least some open courses. In 1999, altogether 2 869 students were registered with the open polytechnic, and by 2000 the figure had already risen to around 6 300. The numbers registered with individual polytechnics range from under 20 to nearly 1 200.

5.3.5. *Numbers studying in polytechnic adult education*

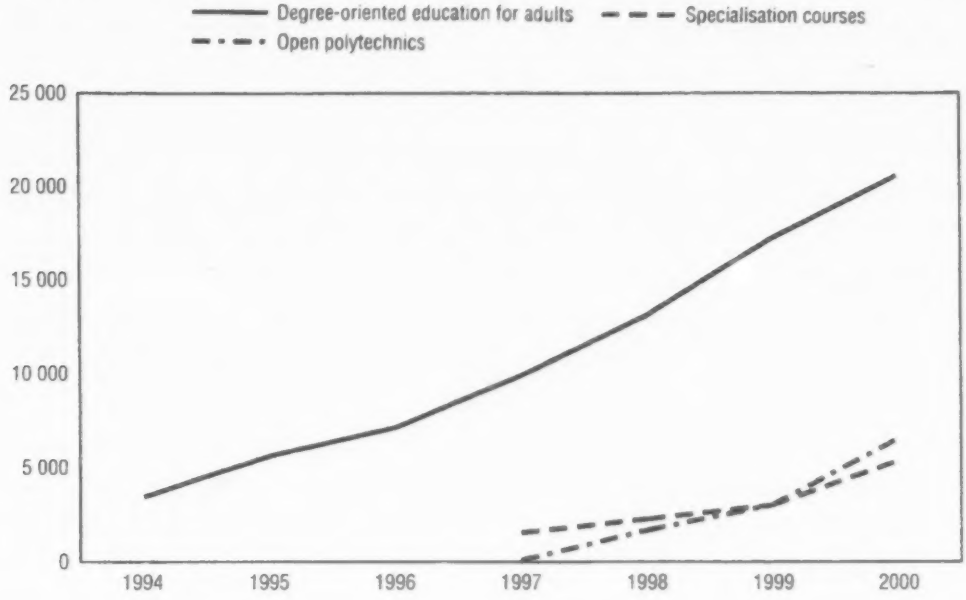
Figure 5.12 shows the number of adult students in degree-oriented programmes and specialisation courses, and students doing open polytechnic studies in 1994-2000.

Between 2001 and 2004, a total of 18 600 average FTE-students (statistical unit) per annum are expected to take part in polytechnic adult education, 14 600 of them in programmes leading to a degree and 4 000 on specialisation courses.

5.3.6. *Polytechnic postgraduate degrees*

In 2001 Parliament passed a bill concerning experimental higher, i.e. postgraduate, studies at polytechnics. The experiment will be made possible through a fixed-term Act in force from January 2002 to the end of July 2005, which will allow postgraduate studies to start on August 1, 2002 at the earliest.

Figure 5.12. **Participation in polytechnic adult education, 1994-2000**



Source: Ministry of Education, AMKOTA database.

Individual polytechnics can apply to the Ministry of Education for permission to launch such programmes.

Polytechnic postgraduate degrees will comprise 40-60 credits, and will be launched gradually in certain fields where working life has particular needs, *i.e.* technology, business and administration, and health care and social services. Postgraduate degree programmes will begin at 3 to 5 polytechnics meeting the highest quality criteria. The student volume has been set at 300 new places a year.

The postgraduate degrees are a new form and channel of adult education designed for mature students, and are intended for graduates already in working life. The programmes will be arranged so that they can be completed side-by-side with a full-time job, and will have a strong orientation towards working life. The final thesis will essentially relate to a research or development project tied intimately to the needs of the student's own work environment and employer.

So far the polytechnic system has been able to offer professional specialisation courses as well as degree programmes. Because the former do not lead to a higher degree, however, polytechnic graduates have often moved on to do further studies at university. The new polytechnic postgraduate degrees designed to meet the needs of both the individual and working life are expected to reduce this pressure on the universities.

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In the preparation of the postgraduate polytechnic degrees, several labour market organisations have aired their doubts about the need for such degrees at this stage and about the demand for holders of such degrees. The Finnish Higher Education Evaluation Council will evaluate the results of the experiment in 2003 or 2004. Decisions on the future status of and policy concerning postgraduate polytechnic degrees will be made by the Government and Parliament on the basis of the experience gained.

5.4. Teachers and other staff

5.4.1. *Teachers*

According to the Polytechnic Act, polytechnics have tenured posts for senior lecturers and lecturers. They may also use non-tenured teachers and lecturers, and other personnel.

Senior lecturers are required to have a Licentiate or Doctorate, and lecturers a Master's degree. Rectors are required to have a Licentiate or Doctorate, to be familiar with polytechnics and to have previous administrative experience. A person with a Master's degree can also be appointed if he/she is otherwise considered to be especially well qualified for the job. Rectors must also have proficiency in the language(s) of instruction at the polytechnic concerned.

When the polytechnics were first set up, a large number of teachers transferred to them who had been working at the former institutes and colleges and fulfilled the requirements of those earlier institutions but not those laid down in the legislation on polytechnics. In their case, a special five-year transition period was provided for, during which these teachers were allowed to hold a post at a polytechnic. The aim was to give them the opportunity to acquire the qualifications required of a polytechnic teacher. The Ministry of Education has also assisted with the training of polytechnic teaching and other staff as part of its support programme for the new polytechnics.

In 2000 altogether some 5 300 full-time teachers were employed at polytechnics: 900 senior lecturers, 3 000 lecturers and 1 350 full-time non-tenured teachers. There were also nearly 1 900 part-time non-tenured teachers. The same year, 130 person work-years of teaching by outside lecturers were recorded, most of these teachers being experts from working life. In this way the polytechnics ensure stronger links with industry and business, and guarantee that their teaching is up-to-date. It is also a way of responding to changes and new requirements deriving from working life, and of ensuring direct feedback from the field.

The educational background of polytechnic teachers is slowly approaching the goals set. 46% of senior lecturers have a Doctorate or Licentiate. 86% of lecturers and 66% of full-time non-tenured teachers have at least a Master's

degree. In 2000 91.3% of all full-time teachers had the required pedagogical training. The last of the temporary polytechnics were not made permanent until autumn 2000, so the five-year transition period guaranteed in the legislation is still not up, and many polytechnic teachers are currently working on their degrees.

Table 5.8. **Students, degrees and teachers, 2000**

Sector of education	Full-time teachers	Part-time teachers	No. of students	Degrees completed	Students to full-time staff	Degrees to full-time staff
Total	5 268	1 869	114 147	14 153	21.7	2.7
Natural resources	206	42	3 958	505	19.2	2.5
Technology and communications	1 522	671	36 495	3 601	24.0	2.4
Business and administration	1 093	392	33 755	3 896	30.9	3.6
Tourism, catering and institutional management	203	157	6 099	460	30.0	2.3
Health care and social services	1 596	144	25 039	4 889	15.7	3.1
Culture	466	433	7 118	730	15.3	1.6
Humanities and education	182	30	1 683	72	9.2	0.4

Source: AMKOTA database.

In 2000 there were an average of 21.7 students and 2.7 degrees to every full-time teacher, though there are great variations between sectors. Culture, and health care and social services, for instance, need far more teaching staff than business and administration, where there was an average of 30.9 students per full-time teacher, compared with 15.3 in the culture sector. There are also great differences within the field of culture itself, in that drama and dance, for instance, largely demands face-to-face teaching in very small groups.

5.4.2. *Teacher exchanges*

The internationalisation of polytechnics has diversified their teaching approaches and improved the pedagogical skills of teachers. Teacher exchanges aim primarily at long-term exchanges lasting over one month.

The long-term objective is that every year one-fifth of all polytechnic teachers should spend at least a month abroad, with the same volume of foreign teacher exchanges to Finland. The joint polytechnic development targets set for 2001-2003 by the polytechnics and the Ministry of Education aim at 500 teacher exchanges a year.

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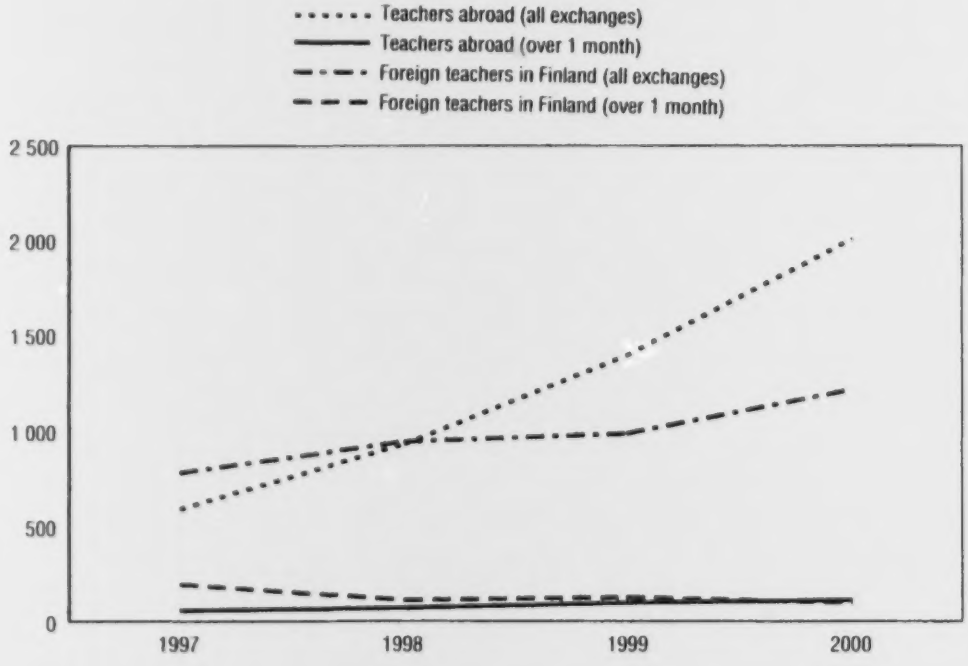
The number of teachers taking part in such international exchanges rose appreciably between 1997 and 1999. Since 1998, far more Finnish teachers have gone abroad than foreign teachers have come here. In the review years the number of exchanges lasting over one month did not rise as rapidly as the overall number of exchanges. In the case of long periods, however, polytechnic teacher exchange has reached an almost reciprocal level.

In 2000 just over 2 000 polytechnic teachers went abroad, with well over a hundred of these taking part in long-term exchanges lasting over one month. About 1 200 foreign teachers worked in Finland, of these nearly a hundred for over a month (Figure 5.13).

The targets for teacher exchanges have not been completely achieved, though much progress has been made. It has proved difficult to arrange for teachers to be away, especially for longer periods, at such an intensive stage of polytechnic development.

Figure 5.13. **Teacher exchanges, 1997-2000**



Source: Ministry of Education, AMKOTA database.

5.4.3. *Other staff*

There were altogether 1 400 non-teaching staff at polytechnics in 2000, employed in a wide range of categories, including personnel administration,

library and information services, teaching support, teaching administration, and financial and general management. They also include staff responsible for the polytechnics' business operations and for projects with public funding.

The biggest categories of other staff are: teaching support (368), general administration (264), project personnel (212) and business services (142). The polytechnics also outsource some functions that would otherwise involve other staff, and in 2000 bought in the equivalent of 258.4 person work-years. IT and other information management services, and teaching administration services are examples of areas where this is common.

The number of non-teaching staff has risen sharply along with the polytechnic reform. Various kinds of planning and development work are far more extensive at polytechnics than at the old colleges and institutes. Similarly, new student administration functions call for far more additional resources. The educational level of non-teaching staff has risen in response to the complexity of the work, and attention is also being given to their continuing and supplementary training.

5.5. Development of teaching and learning

The aim of all development of polytechnic teaching is to improve teaching quality and expand individual choices, taking professionalism and the needs of working life as the basis. Teaching at polytechnics is arranged in programmes leading to Polytechnic degrees. Degree programmes are units designed and organised by the individual polytechnics, aiming to meet the need for advanced vocational expertise in some area of working life. Each polytechnic is responsible for drawing up its own degree programme curricula.

In their teaching provision and in planning the content of individual degree programmes, the polytechnics strive to cater to the needs of industry and business in their own geographical areas. They use various modes of operation to chart these needs, such as feedback questionnaires, advisory committees, alumni activities and teacher/company partnerships. The polytechnics usually have very close relationships with industry and business at all levels in their area. In some cases, the most important stakeholders in working life are also represented in the administration. The needs of working life are also taken into account in planning the content of teaching. The polytechnics have also established ways of ensuring that student feedback is collected. Indeed, apart from working life itself, students are the most important source of feedback in the development of teaching. In the best cases, students are also involved in the work of developing teaching. Opportunities for student participation vary greatly from one polytechnic to another, however, depending on the organisation and operating culture.

Most polytechnics already have well-established quality and evaluation systems in place. The Finnish Higher Education Evaluation Council has so far audited internal quality systems or quality work at fourteen polytechnics. Polytechnics can participate in external evaluations, arranged by the Council.

Closeness to working life is an integral aspect of development at polytechnics and of their various forms of teaching. Each degree involves a 20-50 (in midwifery 90) credit period of practical training during which the student is familiarised with actual situations and working tasks "on the job". Some students do their practical training abroad. The Government helps the polytechnics with arranging these traineeships. In their diploma projects, students make a close study of a particular problem in the sector concerned. Every effort is made to carry out this diploma project, too, in ever closer co-operation with working life. In some sectors, such as technology and communications, over 90% of all these are commissioned by industry or business, and are directly linked with company projects, development work or projects in the work community.

The polytechnics underline the importance of a development approach as a key element in professional competence. Thus project-based R&D work serving working life and regional development is an integral and growing element in studies. In future, one important approach will be to forge an effective link between such R&D and polytechnic teaching to ensure, for instance, that new information generated in projects is also utilised in teaching. This will allow R&D to be drawn on in a way that enriches and enhances teaching. R&D also has the effect of broadening the scope of teachers' work and strengthening their links with working life. New teaching methods include project-based learning and problem-based learning, and every effort is made to extend multi-method teaching and self-directed teaching. Lectures are also made more stimulating using study over the Internet or various parallel materials.

A further third feature given prominence in development of polytechnic teaching is support for internationalisation. The aim is that teaching should provide the skills that working life needs in an increasingly international world. Building of international contacts and student participation in international exchanges are encouraged. Degree courses are also provided in programmes held entirely in English, and courses in foreign languages are provided in all key areas of polytechnic competence. Such courses also further international exchange programmes.

5.5.1. *Student guidance and counselling*

As the polytechnics develop more and more into institutions of higher education, student guidance is moving away from the counsellor-based approach typical of earlier vocational institutes, and towards the provision of

more student-oriented services. Various forms of guidance have been devised, including more help and advice over the Internet and support for independent decision-making.

Another feature reflecting the increasing tendency to adopt higher-education-level practices at polytechnics is the preparation of personal study programmes. Increasingly, the old "school-like" study model, demanding mandatory attendance at lectures and courses, is being replaced by independent study and study involving a variety of methods and situations. This means putting more emphasis on the student's own sense of responsibility, and facing guidance provided and made available by the polytechnic with new challenges. In particular, staff advising students planning and revising their study programmes now play a much more important role. A further factor essentially influencing efforts to improve study guidance and advice is the fact that polytechnic students have become much more heterogeneous as the range of teaching has expanded. They are no longer all the same age, with the same basic abilities, and studying in the same way. Their age, experience and backgrounds differ, and to some extent their skills. This means producing a much wider range of guidance services able to meet the growing diversity of student needs. In future, it will be important to offer students even more wide-ranging services within which personal help from the staff expands to meet the need.

In the new model, traditional study guides and information sessions, with information and guidance over the Internet, would help most students with the common problem situations. But the amount of personal help available would increase specifically when it is needed most, e.g. when students are drawing up their personal study plan, making subject choices and planning career moves. Guidance by teachers is particularly essential in matters related to study content and career planning, but students also need intensive help with matters calling for special know-how, such as situations related to practical training or international exchange. In a "graded" guidance system, the student's ability to find his/her own way becomes particularly important. It also means guidance services can be made available to increasing numbers of students. If guidance is to succeed, the whole polytechnic staff must be aware of how it is organised, so as to be able to guide the individual student in the right direction. At the moment no polytechnic has a completely self-guided guidance system, but some are clearly moving that way, though planning and organisation are still at an early stage.

At many polytechnics, responsibility for student guidance is still carried by a number of full-time study counsellors. Apart from them, the only members of staff involved in student guidance are the office personnel who provide basic information. The main obstacle to better guidance at polytechnics today continues to be the low importance attached to the matter, and thus problems with resources. However, appreciation for student guidance is growing, mainly

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because an increasing body of research shows that guidance has a clear link with success and with dropping out.

In 2000 the Ministry of Education set up a three-year study promotion and support project to find ways to help polytechnic students with their studies, to prevent dropouts and to help with career guidance. The project team is seeking good practices and measures to deal with the following: to raise the study completion level and keep the time taken to get a degree reasonable; to find ways of preventing unnecessary dropouts; to give support for the right choice of career; and to find ways of increasing student motivation. The project is broken down into part-projects at various polytechnics. Most polytechnics have adopted the concept of the "teacher-tutor" side-by-side with traditional study counsellors, and allocate students their own "responsible teacher" to whom they can turn with problems related to their studies. The use of student-tutors is already widespread. There is also a new emphasis on career guidance, and Ministry of Education policy has recently focused on improving careers and recruitment services at polytechnics. They all already have such services, which also provide personal guidance and help and training with jobseeking.

Polytechnic students also have access to the polytechnics' joint Internet-based job service "Jobstep", through which they can apply for vacancies entered by employers. In turn, employers can access student CVs and thus find the employees they need.

5.5.2. *The virtual polytechnic*

One feature of the 2000-2004 education and research strategy was a decision to set up a joint virtual polytechnic among the polytechnics in Finland. This project got under way this year, and should be ready in 2003. The aim is to produce an Internet-based higher education service that provides competitive services of a high international standard via an Internet study system.

Teaching in the virtual polytechnic will be based on the multi-method distance learning approach. It will integrate the wide range of know-how available through the polytechnics and at the same time improve the skills of those participating in the scheme in the realm of network learning and teaching. The virtual polytechnic's services will be made available to students through a common portal. The study material will be produced by different production circles representing various sectors or subjects, and will involve every polytechnic.

The project will also ensure that the various polytechnics' learning platforms, materials and study units are properly standardised so that the student can utilise the virtual polytechnic effectively in his/her own studies and degree work. Similarly, ready transfer of information to the polytechnics'

own information systems will be ensured. Other services accessible via the portal will include joint student and financial administration systems, information services and evaluation tools. The Ministry of Education is financing construction of the portal and at the early stage will also subsidise materials produced by the production circles.

5.6. Library and information services

All polytechnics have their own libraries, which serve both students and teachers, and support research and development. Since 2000, these libraries have been open to all, and thus supplement the library network and information provision in their area.

Basic library services include lending, maintenance of an up-to-date collection, and information retrieval services and instruction. These are mainly free to the user, though charged services designed for local business and industry are sometimes provided. About 1.5% of all library finance came from such services in 2000.

Polytechnic libraries often comprise several separate outlets that may be far apart geographically, though they usually have a central administrative unit. In 2000 these employed over 300 people, some 130 in posts calling for a Master's degree.

Library collections comprised over two million publications in 2000. It is also possible to arrange for inter-library loans. The libraries also archive the theses produced by polytechnic students.

The libraries are becoming more integrated as part of the polytechnic teaching and learning process. Library and information service staff provide user training for students at all polytechnics, aiming to help with independent study and information retrieval. They also provide good facilities for various forms of study, *e.g.* by computer.

The development of polytechnic library and information services is one part of the support programme launched to back up the polytechnic reform, and special project funding has been available for the purpose. It became clear at the experimental stage that the temporary polytechnics did not have adequate library and information services, but since then these services have been intensively developed, with a marked increase in staffing and improved IT capabilities. One of the joint targets set for polytechnics in 2001-2003 is to raise spending on library and information services to at least 5% of total operating costs.

A joint library system for polytechnics is under development. So far, library material has been in several different databases, which has hampered its

efficient use. Decision has already been taken that the Ministry of Education is to meet 70% of the costs of setting up the joint system.

In recent years polytechnic library and information services have been developed in close co-operation with university, scientific and other libraries. Most polytechnics belong to FUNET, the joint telecommunications network of Finnish universities, polytechnics and research centres. They have also been actively involved in the operations of the national electronic library (FinELib), a programme launched by the Ministry of Education aimed at improving conditions for research and education in Finland.

The polytechnic libraries also collaborate closely. A library and information project was set up at the Rectors' Conference of Finnish Polytechnics, and this acts as the co-operation body between polytechnic libraries. Its functions include setting up and steering joint projects.

Notes

1. Including engineering degrees from technical institutes, and forestry engineer and ship captain qualifications.
2. Access to education may, of course, be limited by other factors, such as the individual's earlier educational background, the labour market situation (in labour market training with age limits), or the employer's willingness to pay for staff training and education.

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PART I

Chapter 6

Regional Role of the Polytechnics

Abstract. *Chapter 6 considers the regional role of the Ammattikorkeakouluts (AMKs). It looks at their regional impact on mobility, working life, and R&D.*

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6.1. Regional impact

From the outset, the goal of the polytechnic system has been to boost regional expertise by means of a network of polytechnics throughout Finland offering diversified tertiary education designed to meet the needs of working life.

In the 1990s, polytechnics evolved from postsecondary educational establishments into institutions of higher education promoting regional development. The swift advancement of research and development (R&D) at polytechnics has been of major importance. Such development is required by their mission: to engage actively in the development of working life and to produce relevant new knowledge.

In accordance with the Government development plan for 1999-2004, the regional role and impact of the polytechnics will be enhanced and, as a related measure, their capacity to produce new knowledge relevant to working life, professional expertise and its development potential will also be improved. Applied R&D co-operation between polytechnics and working life is regarded as the main means to achieve these goals. The objective is to channel increased R&D resources to regional development, the promotion of entrepreneurship in the SME sector, and improved welfare services.

The importance of polytechnics for regional development is increasing. At a quickening pace, they are becoming important actors alongside industry and services in regional growth and development. Other indications of this trend include the concentration of centres of expertise around institutions of higher education, national programmes for centres of expertise, technology centres, science parks and other organisations benefiting from the expertise of higher education institutions. These concentrations have been termed "regional innovation systems", covering a region's education and research *in toto* as well as entrepreneurship and related expert and financial services.

Active participation in strategic planning is a prerequisite if polytechnics are to be able to undertake successful regional development. Accordingly, they are seeking to adjust to their new role, and taking an active part in the planning of regional development strategies. A high-quality skilled workforce and R&D at institutes of higher education are key factors in regional strategies. The importance of polytechnics in R&D is expected to grow.

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Polytechnics have introduced and implemented several practical regional development projects. The content, goals and methods employed vary, depending on the polytechnic, the region and the forms of funding available.

Regional development is one of the strategic focus areas of the Government programme, which emphasises the need to increase expertise in the various regions and promotes the competitive capacity of viable regional and sub-regional centres. The Government is devoting particular input to developing eastern and northern Finland and to solving structural problems on the basis of the resolutions and strategies it has arrived at. Consequently, the polytechnics in eastern and northern Finland have been granted EUR 6.73 million in extra resources for regional development projects for 2001-2003.

The target and performance agreements governing polytechnics stress their role in regional development in both the targets common to all polytechnics and the individual EU strategy of each polytechnic. Polytechnics have also drawn up their own EU strategies, mainly to support use of ESF and ERDF programmes. The polytechnics' own strategies detail their particular areas of focus and their viewpoints on regional development.

In spring 2001, in acknowledgement of the importance of polytechnics as regional actors, the Ministry of Education appointed the first centres of expertise in regional development at polytechnics following a submission from the Higher Education Evaluation Council. Attention was given to definition of the regional development mission of a polytechnic in its overall strategy, to forms of co-operation between a polytechnic and local actors in its area, and to results achieved by a polytechnic locally and its activeness in developing its region. Factors cited as strengths of those polytechnics that were selected as centres of expertise include a dense network of connections with their environment, response to regional labour market needs through educational provision and the creation of a foundation for growth industries. Extensive adult education was also seen as a benefit. A focus on the implementation of regional strategies in project work was also seen as a strength. Other factors important for the evaluation of regional development impact were the construction of clusters of expertise jointly with local authorities and businesses in the region, and the assumption of a central role in regional strategy development, EU programme work, internationalisation of the region and development of a regional innovation system.

The impact of polytechnics is a current topic in evaluation of the regional development impact of centres of expertise and the work of polytechnics in general. The impact of their educational provision is initially reflected and shown in the employment of polytechnic graduates, but in the long term the impact will also become evident in trade and industry structures and the rate of social change. Impact can be active, i.e. consist of conscious measures and

anticipatory action, or passive, i.e. involve the knock-on effects of education and training on economy or culture, for instance. Impact derives primarily from interaction, from co-operation between various actors. What is vital is to identify the factors through which training and education can promote positive development trends. These issues are being investigated, for instance by a working group appointed by the Ministry of Education to study the role played by institutions of higher education in regional development.

6.1.1. *Regional mobility*

The subsequent employment and placement of polytechnic graduates have been considered the most important indicators of impact in the evaluation of the polytechnic sector. The latter may be examined by activity and geographic area. What is more difficult to measure is interaction and indirect impact on a particular region's trade and industry.

The activeness and competitiveness of regions and polytechnics are testified by the figures reflecting the attractiveness of the education offered. The latter can be assessed by factoring the number of first-year new places over the number of applicants stating that particular programme to be their first choice. This can be examined at various regional levels, by polytechnic, by polytechnic sub-division, by sector of education, by degree programme, etc. Table 6.1 shows a breakdown by region (Map 6.1).

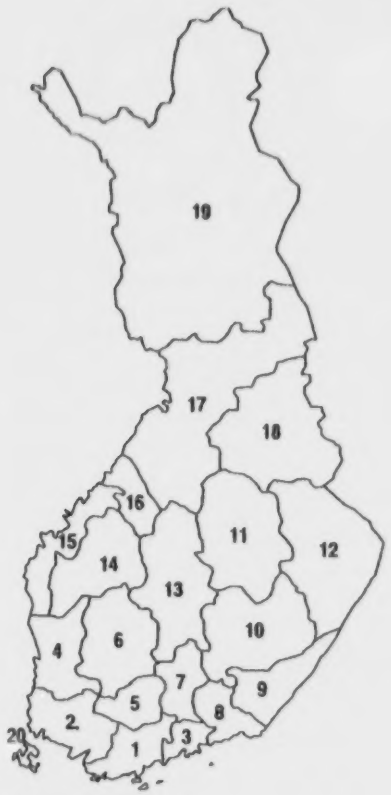
A general decline in popularity is mainly due to an increase in educational provision. Changes in attractiveness in each region to some extent reflect changes in its competitiveness relative to other regions. We should note, however, that sector and degree programme structures also affect the attractiveness of training.

The role of the polytechnics as regional actors can be studied by examining regional polytechnic student flows, the regional relationship between educational provision and demand, and the placement of polytechnic graduates. In 1999, an average of 60% of those starting polytechnic studies did so at a polytechnic in their home region. The exceptions to this rule were Uusimaa, where 80% of all starters came from the region, and Central Ostrobothnia, where the figure was only 34%. There are great differences between regions. These cannot be explained only by differences in the volume of educational provision; the behaviour of young people entering programmes is also relevant.

Polytechnic graduates often find employment in or near the region where they completed their degree. The polytechnics' own regions and nearby regions seem to be preferred, but Uusimaa (the region in which the metropolitan area of Helsinki is situated) shows a net gain in polytechnic graduates.

Nationally speaking, over one quarter of all polytechnic graduates settle in Uusimaa. Generalising from the breakdown by polytechnic, we may observe

Map 6.1. **Finland's regions**



1. Uusimaa
2. Southwest Finland
3. Eastern Uusimaa
4. Satakunta
5. Häme
6. Tampere Region
7. Päijät-Häme
8. Kymeenlaakso
9. South Karjala
10. Southern Savo
11. Northern Savo
12. North Karjala
13. Central Finland
14. Southern Ostrobothnia
15. Ostrobothnia
16. Central Ostrobothnia
17. Northern Ostrobothnia
18. Kainuu
19. Lapland
20. Åland

Source: Ministry of Education.

that, of those completing a degree at a polytechnic outside Uusimaa, about one in five eventually settles there (in Uusimaa). The comparable figure for polytechnics in Uusimaa is 90%. The sector-specific breakdown shows that particularly those who complete a degree in business and administration settle in Uusimaa. The highest incidence of graduates settling in the region where their polytechnic is located is in the health care and social services sector, regardless of whether the graduates actually find jobs there.

The sector-specific placement breakdown shows whether the educational provision of a polytechnic corresponds to the needs of trade and industry and of the labour market in its region. If polytechnic graduates in all sectors settle and find employment in the region where the polytechnic is located, the polytechnic may be considered to meet the labour market needs of the region well. However, if a considerable proportion of graduates in a particular sector move to other regions or remain unemployed, the question of the appropriateness of the polytechnic's educational provision to the needs of the region presents itself (Figure 6.1).

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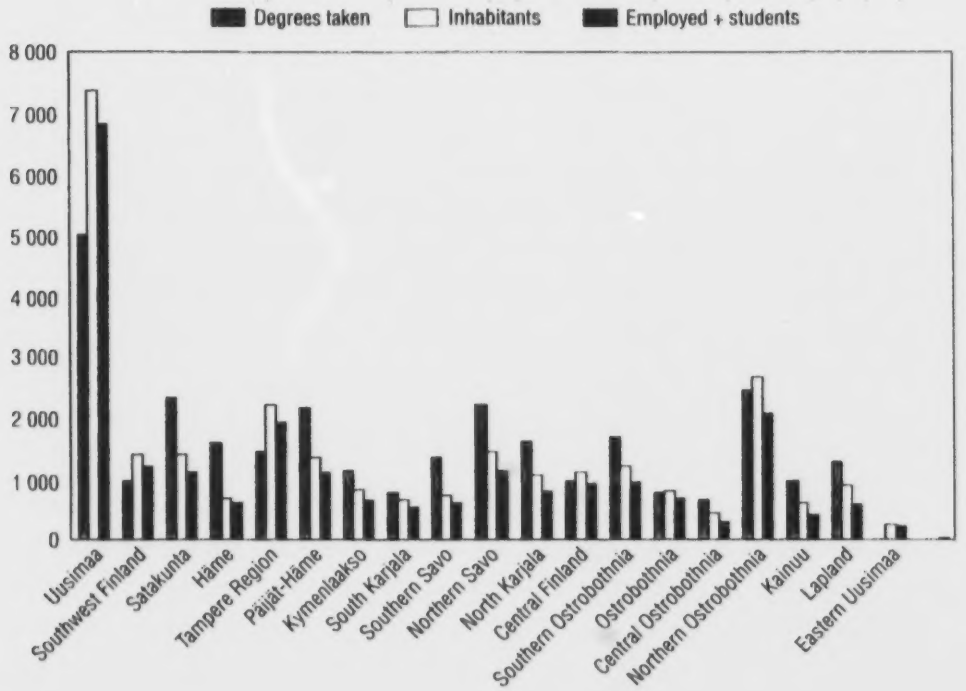
Figure 6.1. **Placement of polytechnic graduates (1995-99) at the end of 1999, by region**



Source: AMKOTA database.

Polytechnics and their respective regions can be grouped according to student flow. Several such groupings have been proposed, one being as follows:

- Self-sufficient (*e.g.* Uusimaa and Northern Ostrobothnia): many students from the region, and graduates generally find employment in the region itself.
- Labour recruiters (*e.g.* Tampere Region and Central Finland): the number of graduates finding employment in the region is larger than the number of starters from that region.
- Labour donors (*e.g.* Southern Ostrobothnia): students come from the same region but find employment elsewhere.
- Trainers (*e.g.* Häme, Southern Savo): many students come from outside the region, and graduates find employment elsewhere.

Future challenges for polytechnics relate particularly to regional development. The significance of polytechnics is increasing as attempts are made to encourage growth spurts in areas outside the Helsinki metropolitan area. One particular government measure for the near future is to increase the

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Table 6.1. **Attractiveness of polytechnics by region, 1998-2000**[1]

Region	Ratio of new study places to first-choice applicants			
	1998	1999	2000	Change in percentage points 1998-2000
Uusimaa	19%	24%	26%	7
Eastern Uusimaa	29%	31%	32%	3
Southwest Finland	19%	23%	22%	3
Satakunta	37%	43%	47%	10
Kanta-Häme	26%	35%	36%	10
Tampere region	16%	22%	22%	6
Päijät-Häme	19%	18%	20%	1
Kymenlaakso	36%	39%	53%	17
South Karjala	27%	36%	36%	9
Southern Savo	33%	43%	42%	9
Northern Savo	29%	33%	34%	5
North Karjala	31%	41%	40%	9
Central Finland	14%	16%	18%	4
Southern Ostrobothnia	34%	41%	47%	13
Ostrobothnia	49%	45%	45%	4
Central Ostrobothnia	38%	49%	46%	8
Northern Ostrobothnia	20%	21%	22%	2
Kainuu	50%	57%	57%	7
Lapland	35%	37%	40%	5
Total for entire country	**23%**	**27%**	**29%**	6

1. Does not include programmes in foreign languages and adult education.
Source: AMKOTA database.

number of growth centres of various sizes. Tangible measures related to this are highly likely to impinge on the domain of the polytechnics. Polytechnics co-operate actively with business, and the aim is to encourage focus on this approach in the future too. Enhancing R&D to cater to the labour market in the polytechnics' respective regions will also be important. The aim of polytechnics is to become an important component in the regional innovation system. Their role as actors in regional development has strengthened, but is still not consolidated. In some sectors, this work is only beginning. Achieving regional impact requires co-operation between polytechnics as well as between universities and polytechnics.

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Table 6.2. **Placement of polytechnic graduates (1995-99) at the end of 1999**

	Total polytechnic graduates		Employed			Unemployed		Student	
			Employees	Entrepreneurs	Total				
	No.	%	No.	No.	%	No.	%	No.	%
Uusimaa	7 344	26.9	6 315	81	87.7	327	4.5	400	5.4
Southwest Finland	1 382	5.1	1 042	47	78.8	148	10.7	105	7.6
Satakunta	1 380	5.0	950	49	72.4	213	15.4	104	7.5
Häme	677	2.5	529	20	81.1	63	9.3	42	6.2
Tampere Region	2 197	8.0	1 723	57	81.0	210	9.6	123	5.6
Päijät-Häme	1 344	4.9	981	45	76.6	191	14.2	63	4.7
Kymenlaakso	801	2.9	571	17	73.4	129	16.1	50	6.2
South Karjala	649	2.4	458	4	71.2	93	14.3	70	10.8
Southern Savo	725	2.7	510	18	72.8	96	13.2	63	8.7
Northern Savo	1 421	5.2	976	28	70.7	252	17.7	115	8.1
North Karjala	1 050	3.8	682	21	67.0	207	19.7	88	8.4
Central Finland	1 106	4.0	777	27	72.7	173	15.6	94	8.5
Southern Ostrobothnia	1 202	4.4	785	63	70.5	212	17.6	77	6.4
Ostrobothnia	790	2.9	589	20	77.1	103	13.0	57	7.2
Central Ostrobothnia	434	1.6	255	12	61.6	99	22.8	28	6.5
Northern Ostrobothnia	2 642	9.7	1 843	38	71.2	414	15.7	182	6.9
Kainuu	600	2.2	356	12	61.3	133	22.2	49	8.2
Lapland	876	3.2	508	10	59.1	219	25.0	67	7.6
Eastern Uusimaa	231	0.8	189	5	84.0	16	6.9	13	5.6
Åland	25	0.1	17	2	76.0	1	4.0	4	16.0
Not known	452	1.7	0				0.0		0.0
Total	**27 328**	**100.0**	**20 056**	**576**	**75.5**	**3 299**	**12.1**	**1 794**	**6.6**

Source: AMKOTA database.

6.2. Contacts with working life

Polytechnics are, more than universities, oriented towards practical working life and closely connected with their respective regions and regional development prospects. In the Government's education and research development plan this is expressed as follows: "Polytechnics should strengthen their links with working life and their competence in workplace development, especially as regards the needs of SMEs and regional development. Polytechnics should also promote R&D in co-operation with working life. Universities should focus on basic scientific research, scientific researcher training and basic teaching." Thus, the basis for development of polytechnics' teaching and other community service functions is closely connected with the working life of the region and its development.

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The central principle in teaching leading to degrees is to enhance students' connection with working life gradually as their studies progress. This, along with other co-operation with working life, has been promoted in a number of ways. However, the responsibility for the teaching and its development lies primarily with each polytechnic.

The target and performance agreements between the Ministry of Education and the polytechnics feature "Relations and research and development with working life" as a point focusing on the improvement of this area individually at each polytechnic.

Polytechnics have sectoral advisory committees which discuss issues related to curricula, arrangement of teaching and other co-operation with working life. In addition to participation in these formal bodies, representatives of working life have various other opportunities for influencing the work of a polytechnic.

Polytechnics and the different sectors within them are at widely varying stages of development as regards co-operation with working life. At the simplest level, relations involve practical training placements, finding subjects for diploma projects and giving feedback on teaching and its development. At a deeper level, co-operation includes international co-operation, project-oriented diploma projects, exploitation of the competence of both parties (personnel training, teachers from businesses, etc.), systematic business services, increased assessment and feedback co-operation, and minor joint projects in R&D. At the deepest level of all, co-operation involves polytechnics and businesses sharing premises and equipment, concluding agreements on sub-contracting or partnership projects, engaging in extensive co-ordinated international projects, involving the polytechnic continuously in the internal competence development of companies, and pursuing continuous R&D.

6.2.1. *Response to the needs of the SME sector*

Although Finland has been able to make good use of the globalisation trend in economies and technology, retaining existing development potential requires increased investment in competence and its use. Companies are increasingly moving towards locations where high-quality knowledge and competence are available.

The lack of competence in demanding expert and management positions in emerging companies is, in many cases, an outright obstacle to business growth, according to studies conducted by Suomen Yrittäjätry. Only 20% of Finnish SMEs can be described as growth-oriented. The lack of high-level knowledge in the management and development of SMEs is seen as a major problem in business growth. The number of people trained by universities is considered to be inadequate in view of the future needs of SMEs. The demand for highly educated personnel is also growing because of the constant increase

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in the contribution made by SMEs to turnover and employment in the private sector. Polytechnics thus have an essential role in increasing competence in SMEs and creating development potential.

Because the polytechnics form a comprehensive network, they can fulfil the needs of the SME sector in their respective regions. Producing skilled labour for SMEs in areas outside growth centres is a particular challenge for polytechnics.

6.2.2. *Diploma projects*

In general, the aim is as far as possible to conduct diploma projects in co-operation with industry and business, and to ensure that they relate to actual development challenges in working life. The target and performance agreements between the Ministry of Education and the polytechnics incorporate targets up to 2000 regarding the proportion of working-life-oriented diploma projects in the total number. It was therefore not considered necessary to enter a similar target in the most recent target and result agreements. A new item entered for monitoring in the AMKOTA database is the project-oriented diploma project. The purpose here is to promote diploma projects with a broader orientation towards working life. A "project-oriented diploma project" is one that fulfils one of the following criteria: 1) industry or business pays either the polytechnic or the student for doing the project; 2) a representative of working life is appointed to supervise the project; 3) a workplace community is intended from the start to make use of the results of the project in its own activities, and this is agreed before the diploma project begins. The first data on the proportion of such diploma projects in the total number are available for 2000 (Table 6.3).

Table 6.3. **Polytechnic diploma projects by sector, 2000**

	Diploma projects	
Sector	Total	Project-oriented
Total	11 936	8 221
Natural resources	515	399
Technology and communications	3 596	3 402
Business and administration	3 472	2 373
Tourism, catering and institutional management	414	278
Health care and social services	3 163	1 322
Culture	712	413
Humanities and education	64	34

Source: AMKOTA database.

6.2.3. *Practical training and career and recruitment services*

All polytechnic degree programmes include practical training worth 20 to 50 credits and a thesis usually worth 10 credits. Development of the practical training included in the degrees has been discussed particularly extensively.

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Training practices vary greatly between sectors. In some cases, the training is not considered to provide enough new content. Many polytechnics are therefore giving special attention to improving supervision of practical training.

In addition to unit price funding, the Ministry of Education has granted polytechnics extra funding through the target and result agreements in order to develop their career and recruitment services, among other things. A total of EUR 790 000 was used for this purpose in 2001. Also, the polytechnics have undertaken to increase their basic funding for this purpose by the same amount.

6.3. R&D at polytechnics

In recent years, R&D has been one of the main areas of focus in the development of polytechnics. The institutions that were the predecessors of the polytechnics rarely did anything that could be described as R&D. On the other hand, some of them had a strong tradition of co-operation with business, including selling training services to companies and providing other business services.

The government education and research development plan for 1999-2004 includes the following target: "The capacity of polytechnics for producing new knowledge about working life, professional expertise and its development will be improved. To this end, measures will be taken to develop professional postgraduate degrees and applied R&D jointly undertaken with business and industry. The increase in R&D will be especially geared to promoting regional development, supporting the SME sector and developing welfare services."

In 1999, EUR 3.89 billion were spent on R&D in Finland; this is equivalent to 3.2% of GDP. Research expenditure amounted to EUR 0.7 billion at universities and EUR 27 million at polytechnics. The percentage of outside funding was 48% at universities and 73% at polytechnics. The total number of research personnel at higher education institutions was about 20 000, of which 470 were employed at polytechnics.

By the end of 1999, all polytechnics had drawn up an R&D strategy of their own, on funding from the Ministry of Education. Subsequently, most polytechnics have reorganised this function. In 2001, the Ministry of Education for the first time allocated a total of EUR 5 million in funding to polytechnics to create a basic R&D framework. Furthermore, in the target and performance agreements the polytechnics and their maintaining bodies undertook to increase their own funding allocations to R&D by a total of EUR 3.4 million. The Ministry of Education will be increasing basic R&D funding for 2002 by a further EUR 0.8 million, and the polytechnics have likewise undertaken to increase their own funding. The Ministry of Education funding is intended to lay the foundation for R&D; the funding for actual research must be found

from other public and private sources. R&D at polytechnics is now experiencing a period of strong growth.

R&D at polytechnics is applied R&D based on the actual needs of working life. It focuses on practical issues in working life and aims to promote regional development, particularly by promoting and reinforcing SMEs and welfare services. The practical goals include creating new or improved products, production tools or methods and services.

On the other hand, R&D forms an important basis for improving the competence of polytechnics and thus part of the knowledge being taught. R&D also supports the study process by providing opportunities for examining phenomena in the relevant sector. R&D is a component of the service aspect of polytechnics; its results benefit the immediate vicinity of the polytechnic and, more generally, society as a whole.

In R&D, polytechnics focus not only on new SMEs but also on traditional ones that pursue little or no R&D of their own. Extending innovation and the principles and practice of R&D to this rather large group of companies is an important challenge for polytechnics. Problems found in the SME sector are different from the problems and development needs of large companies. Polytechnics may provide expert help in addressing these problems and help develop the business of SMEs.

The regional aspect is a central feature of R&D at polytechnics, the main aim being to serve the region in which an individual polytechnic is located. In most cases, the objectives of R&D at polytechnics have been linked to regional objectives, with an emphasis on supporting industrial SMEs and service production.

Multi-skilling is also considered a resource and strength of R&D at polytechnics. As examples we might mention the production of welfare services, cultural services and various technology product development and commercialisation projects.

R&D is usually organised at the degree programme level at polytechnics.

Co-operation and networking related to R&D at polytechnics are only just emerging, which is why the focus is now on creating a network that would make the best possible use of the results of R&D at polytechnics and co-ordinate the work of universities and polytechnics on the regional and national levels.

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PART I

Chapter 7

Development Trends and Challenges

Abstract. *Chapter 7 identifies challenges facing the system. These include the role of Ammattikorkeakouluts (AMKs) in enhancing the international competitiveness of Finland's system of higher education, their role as centres for innovation, their role in enhancing adaptability in the labour market, and the challenge to carve out a unique and complementary role in the higher education sector.*

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7.1. Globalisation: how to enhance the competitiveness of Finnish higher education

With rapid globalisation, progressive European integration, and the advance of information and communications technology, national education systems are now facing a wholly new competitive situation in Europe and elsewhere.

International producers of education services, both commercial and non-commercial, are challenging national institutions. The international supply of education may be expected to expand considerably in future years as the volume of online teaching increases and its quality further improves.

Finland's extensive and geographically comprehensive network of higher education institutions is a competitive provider of education to Finnish young people and adults. The absence of tuition fees, the good infrastructure and the reliably uniform high quality have ensured the continued interest of students, despite the increasing range of foreign study options available.

Ensuring the quality of Finnish education and its international competitiveness will be vital in the near future in order to prevent a brain drain of talented students and scientists from Finland.

Thanks to decisive policy and changes in the operating environment, Finnish higher education has become internationalised rapidly. Student exchange numbers have increased sharply beginning in the 1990s, thanks particularly to major EU programmes. International R&D co-operation has also increased and expanded into new fields. Still, in international comparison the Finnish higher education is seen as a rather closed system. Number of foreign students is still low.

Finland has stressed the need to further co-operation and interaction in its internationalisation of education policy, and the aim of international operations is primarily to improve the quality of education and broaden its range. International co-operation has also been used to enhance the international skills of Finnish students and researchers, including their language and cultural skills.

Rapid shifts in the labour market mean Finland has to compete for the availability of foreign labour along with other industrialised countries. The situation is particularly challenging for Finland in a number of respects.

Although awareness of Finland has increased considerably with our membership of the EU, the country is still not very well known outside Europe.

One way of bringing foreign labour into the country is to increase the provision of education for foreign degree students and to provide them with the opportunity to get a job in Finland after completing their degree, at least for a fixed period. This new approach requires more determined PR for Finnish competence, to make it better known and more attractive in Europe and beyond. In practice, this requires the creation of a specific marketing strategy for higher education and research, creating generally accepted national principles for succeeding on the global education and labour market.

This strategy must be based on the principle of maintaining the high quality of teaching and research, allowing the results to speak for themselves. It should be possible to market Finnish education world-wide, although we should have carefully selected target areas in which we aim to raise awareness. Finland should also identify the sectors in which it can offer special expertise, and this expertise must be commercialised, at least in part.

On the one hand, the potential of Finnish higher education institutions for offering education to international students in Finland should be increased. This requires more and better teaching in English. On the other hand, Finnish higher education should in some respects be developed so that it can be provided elsewhere too, either virtually or by traditional means. How all this fits into the national principle of providing education free of charge must, of course, be very carefully considered.

Finland cannot remain passive, waiting to see what its competitors do, or looking on as foreign organisations increase their supply in Finland; our higher education system must be adapted to the changing market situation.

7.2. Development of institutions of higher education as centres of innovation

At the national and regional levels, international economic and technological developments have a strong impact on business and industry structures, company business models and the demands for competence made of employees and of society as a whole. This development is being guided and its new potential exploited through innovation policy, i.e. broad, determined development of the resources of innovation across sectoral boundaries. A functional and efficient national innovation system and regional systems are becoming increasingly important in the generation of economic growth and welfare.

Finland has all the potential for exploiting present trends. The economic outlook remains good, employment is improving, and unemployment has decreased. Investment in R&D has increased considerably, particularly in the

private sector. Government has launched several measures to keep the public-sector education and research system up to speed with the changes going on in society.

The public research investments implemented in the late 1990s were well aimed and productive for the economy, employment and business. The aim is to continue this trend. New, complementary and well-aimed development measures will ensure the competitiveness of our national innovation system in the future, too.

Competence development is seen as the main tool for influencing the development of the regions. Investments in competence can be seen to have a positive impact on regional employment, development of the business and industry structure, reinforcement of regional economies and other indirect social and cultural knock-on effects. The fact that society is becoming more open and more globalised means that the success of the regions is increasingly dependent on their position amid international competition. Success here requires investment in quality and a smooth innovation-to-product chain.

New innovations emerge from a foundation of broad high-quality basic research, the main responsibility for which lies with universities and research centres. Ensuring the quality of basic research requires sufficient resources and international co-operation among universities. Units undertaking university-level research must be sufficiently large and diversified if they are to do successful research. The polytechnics have a natural role in innovation alongside the universities, complementing them particularly in the area of applied research. Finnish higher education policy makes regional development a particular responsibility of the polytechnics. It is also important to take education in entrepreneurship skills from the SME point of view sufficiently into account in education and research. The polytechnics have a central role in improving SME operations and entrepreneurship.

Basic research, new innovations and their product development require the creation of expertise networks involving other regional actors. Universities and polytechnics must increasingly network with trade and industry partners and other actors in their respective regions. From the national point of view, it is also important that regions profile themselves on the basis of their respective strengths.

Finding new growth sectors is a major factor in innovation. At the moment, the transfer of technology and other expertise and the development of business competence are seen as important features in regional development. In the future, growth development will focus on "substance fields" and content production, where technology and business competence have a complementary role to play. To succeed in the future, something

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beyond IT and biotechnology must be found, so the courage to put venture capital into R&D is needed.

R&D is a rapidly developing field at polytechnics. Unlike universities, they have no tradition in this field, however. They also do not yet have established monitoring, quality control or funding systems.

7.3. Response to the future needs of the labour market

Finland's social and industrial policy rests on the principle that knowledge and expertise are the basis of economic competitiveness and the welfare of society as a whole. Finland can only be a success through high-quality education and research, innovative expertise and the use of up-to-date information and communications technology.

Globalisation and the "new economy", which might be described as an economy of expertise, highlight these principles and make increasingly high demands of education, research and development of the innovation system.

Raising the level of the population's education in general and that of the labour force in particular must continue. Higher education plays a vital role in this, but alone it is not sufficient; attention must also be paid to general education, secondary-level general and vocational education, and adult education.

As early as 1995, the Finnish Government set the goal of scaling the number of new places in higher education to correspond to 60% to 65% of each new age group. At the moment, the supply corresponds to about 65%. If we estimate that 80% of all students complete their education, we find that about half (52%) of each age group will complete a higher education degree with this level of provision. However, this result will not be achieved until about 2005.

Studies conducted by Finnish industry concerning the demand for new labour in the present situation also demonstrate that new recruits consist of roughly equal numbers of those with secondary-level post-comprehensive vocational qualifications, on the one hand, and those with university or polytechnic degrees, on the other. At the moment (1999), the exact proportion is 52% vocational qualifications and 48% tertiary-level. The latter figure does not directly equate with actual higher education degrees, because it also includes higher vocational qualifications not transferred to the higher education system due to the transition period in introducing the polytechnics.

Expansion of higher education provision from its present volume may become necessary quite soon. As age groups become smaller, the strategic significance of young labour – crucial for the economy – will increase, and more must be invested in safeguarding their education level.

The evolution of the business and industry structure and changes in production and working methods call for a rise in the overall level of education. Jobs in the service sector, the information industry, other high-tech fields and the culture industry are increasing. This trend, which is already visible in the Helsinki area, will spread in stages to all regions, considering the emphasis on the balanced development of all regions in the country. Increasing expectations are focused on improving the quality of services. As the population ages, this applies particularly to welfare services.

Finland has considerable scope for improving the application of new information and communications technology and business expertise, which in turn faces all higher education with new challenges. The roll of R&D-oriented knowledge-based work is increasing in all sectors, and this requires not only a rise in the general level of education but reinforcement of the position of R&D at polytechnics in particular. Postgraduate polytechnic degrees will probably play a significant role in achieving these goals.

An education system with high-level quality goals dovetails excellently with Finland's social and industry policy development strategy. In view of the demands of today, the population and the labour force should be appropriately overeducated if we are to ensure the availability of resources for meeting new challenges and adapting to constant change. There should always be something in reserve.

In view of the new needs of society and working life and new opportunities – such as the virtual university – it is not difficult to envision a future where education policy can be summarised as "tertiary education for all", though without meaning that everyone should complete a degree.

7.4. Structure of the higher education system

Finnish higher education policy is based on the widely accepted principle of two mutually complementary sectors. It has been considered self-evident that the demands of working life have developed and are developing in a way that justifies the provision of professional higher education. This policy is also supported by the fact that it has not been considered appropriate to encumber universities with an even greater training burden.

Diversification of higher education has been one of the most important goals of polytechnic reform. Another significant factor behind the reform has been the need to improve the international comparability of Finnish education. This, it was considered, would make the international mobility of students and researchers easier, and enable graduates to find jobs on the international labour market, particularly in Europe.

This goal has been well achieved: Finnish polytechnic graduates have had no problem in going on to study or work abroad. By contrast, graduates from

the former postsecondary vocational colleges often experienced major difficulties in international mobility.

A reform of university degrees was carried out in parallel with the polytechnic reform. Three-year lower university degrees (Bachelor) were introduced in nearly all sectors around the middle of the 1990s. This generated considerable debate immediately, since it was considered that graduates with university Bachelor degrees and graduates with polytechnic degrees would be competing for the same jobs. Nonetheless, reform of the university degree system was considered necessary because of internal problems in the system, on the one hand, and greater international comparability on the other. In the past, Finnish university graduates had had difficulty in getting their first degree accepted as equivalent to a Master's degree when studying or working abroad.

Now that significant numbers of polytechnic graduates are already in the labour market, an assessment of the functionality of the entire higher education degree structure may be undertaken. As was observed earlier, polytechnic graduates have been successful in finding employment. At university, it is not compulsory to take a Bachelor's degree; in most fields, students are accepted directly into a Master's degree programme. Consequently, neither students nor universities see the Bachelor's degree as a "real" degree, and few students actually take it, at least within the time or on the scale intended. Thus, the fact that both higher education sectors offer degrees at the same level has not been seen as a problem in the labour market.

The Ministry of Education wishes to strengthen the status of the university Bachelor's degree. In practice, this means that the Government would like to reduce the number of students leaving university without any degree at all. On the other hand, the Government has also stressed the need to develop cross-disciplinary Master's degrees to meet the needs of working life. The underlying principle here is that a degree structure incorporating two "cycles" allows more flexibility and also enables students to combine work with study better than at present. Still, the main goal remains for the majority of university students to complete a Master's degree before entering the labour market.

Experiences at the polytechnics have led the Ministry of Education to assess that strengthening the status of the university Bachelor's degree does not conflict with developing the polytechnics. The basic task of the polytechnics was and is to prepare students primarily to enter the labour market immediately after graduation. Ultimately, there are only a few fields in which the binary model might be a problem – business and administration, and technology in principle – since elsewhere the educational and career structure are clearly diversified. In practice, however, there is not likely to be a

problem in business or technology either, since in these fields university students aim primarily to complete a Master's degree, and the Bachelor's degree is seen only as an intermediate stage.

The educational responsibility of polytechnics in their own area of expertise has been further strengthened by the new arrangement for postgraduate studies at polytechnics. It is evident that there is a demand on the labour market for holders of professional postgraduate degrees. The Finnish polytechnic postgraduate model is special also in the sense that it is clearly intended for adults who already have a career, and in this sense it does not aim to duplicate the university degree structure. This approach is expected to reinforce the identity of the polytechnics and the difference between their expertise and that of the universities, helping to further profile the two sectors.

No clear status has yet been defined in the national degree system for polytechnic postgraduate degrees. This is may be a problem not only on the national level but internationally too. It remains to be seen whether polytechnic postgraduate degrees will become a competitive path for students if the formal further qualification they represent is not unambiguously recognised. This is an obvious problem in competing for international students.

So far, the aim has been to keep these two higher education sectors rather strictly apart in Finnish higher education policy. Co-operation between universities and polytechnics has been taking shape, and potential has been found for feasible extensive regional education co-operation. What is problematic is that there is no clear national policy, for instance regarding the recognition of prior studies and degrees within higher education.

Movement between polytechnics and universities has been slight so far. From the point of view of the feasible use of resources, it would be desirable to reach a situation where earlier studies would be accepted for inclusion in a new degree to as full an extent as possible. A national policy on recognition of credits should exist to safeguard students' legal rights.

However, maximum acceptance of credits should not lead to any merging of education content: one-to-one correspondence is not the aim. In the present system, where polytechnics cannot provide a competitive alternative to the Master's degree programmes of the universities, there is a danger that polytechnic basic degrees may be taken too far towards the university Bachelor's degree in the hope of ensuring that students have the capability to pursue further studies. On the other hand, there is also a danger that university Master's degree programmes may become too professionally oriented if a large share of students enter them from the polytechnics.

Internationally, the trend seems to be towards eliminating administrative and other formal differences between higher education sectors or different higher education degree programmes. Finland must, in order to maintain competitiveness, monitor trends in higher education structures closely, particularly in Europe. A more flexible system might be appropriate in Finland, too. Different regions have different needs, and it is difficult to pinpoint a single model for university-polytechnic co-operation that would be appropriate for everywhere in the country; the system should in and of itself allow for a variety of approaches.

7.5. Legislation

According to the Government Programme, the legislation on polytechnics will be revised during the term of the current Government. The aim is for the Government to submit a bill for new polytechnic legislation to Parliament during the autumn session, 2002. The education and research development plan for 1999-2004 notes that the legislation will be revised with regard to the international evaluation to be made of the polytechnic reform.

The development plan states that the polytechnics will be developed as a part of the international higher education community, emphasising their role as high-quality experts in working life and its development. Autonomy and democracy at polytechnics will be enhanced, and steering procedures reduced.

The existing Polytechnics Act was approved in 1995, and was the foundation for the polytechnic reform. However, the stronger status of the polytechnics and clarification of their functions and practices have created a need for new legislation.

The university legislation was revised and came into effect in August 1998. It has been considered justified in Finland for the two sectors to be governed by separate legislation partly to highlight their different profiles but also to ensure a difference in the way that universities, on the one hand, and polytechnics, on the other, are maintained. Nevertheless, it is important that the new polytechnic legislation be prepared with reference to the context of the university legislation.

A working group on revision of the polytechnic legislation was set up in autumn 2001. This work will have to address several key issues in the operation of polytechnics. When the current Act was being prepared, there was much discussion about its basis: was it only to address the provision of education or also to describe the polytechnic as an institution? Both these aspects are in fact incorporated in the Act, although it does not lay down provisions on the mission of the polytechnics. Now that the polytechnics have

become more established and are increasingly taking on external functions, their mission will have to be defined in the new Act.

The new legislation will have provisions on the basis for studies and degrees, with regard to prior development, including the current experiments with polytechnic postgraduate degrees. The development of European and international degree structures must also be taken into account. The growing contribution of the polytechnics to R&D, regional development and teacher training requires a clearer definition of these functions. In 1995, there were considerable reservations about the role of polytechnics in R&D, for instance; now, R&D is seen as a basic function, and polytechnics are considered key actors in the regional innovation system.

The new legislation needs to address the steering of polytechnics, particularly as regards other than statutory control. The target and performance negotiations between the Ministry of Education and the polytechnics have emerged as a major steering tool, though the procedure is not provided for in the current legislation. This steering structure has been modified through a move to three-year target and performance agreements, although the provision of education and resources are still agreed on annually. From the Ministry's point of view, the target and performance agreement procedure is a significant tool in governing higher education policy. It also offers an opportunity for regular dialogue and operative assessment with each individual polytechnic. The municipalities spokesmen, however, take the view that, in the Finnish context, this level of polytechnic steering, as practised by the Ministry, is too prescriptive and argues that local authorities should themselves control the polytechnics. In order to clarify the situation, the Ministry of Education would like to see the steering system be outlined more clearly in the future legislation.

The current legislation includes rather broadly defined provisions regarding the administration of polytechnics. The body maintaining a polytechnic has considerable latitude in organising its administration. When the legislation is revised, it is important to consider the relationship between and functions of the maintaining body's administration and the autonomous administration of the polytechnic. The aim is to ensure that the new legislation strengthens the autonomy of polytechnics, democracy and the status of students.

The new legislation should also include clearer provisions on polytechnic adult education.

The polytechnic funding system is being overhauled. This work must be feasibly linked to the new polytechnic legislation package to increase its transparency in relation to university funding, among other things.

PART II

Examiners' Report

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Executive Summary

This review is intended to assess how the "dual" system is working in Finnish higher education, and the implications for potential future developments. This report is based on an examination of the Finnish policy to establish in the early 1990s a sector of vocationally/professionally oriented higher education in institutions called *Ammattikorkeakoulut* (AMKs) or "polytechnics". It was prepared by an independent team of examiners that visited Finland for ten days in October 2001 and undertook a demanding programme of visits and discussions with a wide range of managers, owners and stakeholders.

The polytechnic policy was part of the overall government strategy, in the context of changing economic and geo-political circumstances and severe economic decline in the early 1990s, to develop a "knowledge economy".

The 1995 legislation made permanent the experimental system and the AMKs initially set up. By 2001, the AMK policy had resulted in the creation of some 29 higher education institutions by amalgamations of about 215 schools and colleges. By 2004, there will be 25 000 entrants annually to the AMKs, representing about two thirds of those entering higher education.

The AMK policy in Finland has been remarkably successful. There is general acceptance of the existence and value of a sector of higher education with a distinctive educational mission, though controversy exists about the future development of the sector. In general, the programmes are relevant to working life, innovative, and well received by employers and students.

Evidence from Finland's recent history supports an ambitious policy of investment in higher education. It is evident that Finland has already achieved a very high level of participation and that whilst the targets for 2004 represent an increase on present numbers, the change is incremental, not fundamental. A dual system in Finnish higher education should be maintained. There is a substantial consensus in Finland for provision of higher education, different from that traditionally provided by universities, and directed towards the needs of working life. There is, thus, a need for considerable diversity in higher education provision. Higher education should not be merely instrumental. The underlying principle of the future organisation of higher education in Finland should be to offer maximum individual mobility, but minimum

institutional mobility. The review team was encouraged by examples of co-operation between neighbouring polytechnics and between polytechnics and universities and would encourage further developments along these lines.

Whilst the diversity of forms of polytechnic ownership is a strength of the sector, it presents some problems. The Government may wish to clarify in any new legislation the primacy of the Act of Polytechnic Studies in respect of governance of the polytechnics. The issue of ownership of polytechnics should be separated from the responsibility for administrative and academic matters in the polytechnics. Separate boards should be responsible for each function.

The current funding structure of the polytechnics reflects the establishment period of the sector. It is mainly input oriented, rather diversified and fragmented. In the future the sector should be funded for agreed student numbers for the institutions as a whole, instead of per field of study for each institution. Funding should be agreed for a three year period, rather than on an annual basis. The institution's strategic plan and past performance would be the basis for this agreement. Whilst capital funding would still remain the responsibility of the owners, each institution should have access to central government funds to support investment. The extent of such support should be the subject of negotiation.

The general thrust of the curricula and instructional methodologies revolves around the core and distinctive principle of the AMK – the education is derived from the needs of the workplace both current and future. However, there are indications that much remains to be done to solidify the AMKs' connections to working life.

Given that they are a relatively new sector, the polytechnics have been remarkably successful in establishing themselves internationally. The Government should consider in which ways institutions can be stimulated to offer degree programmes abroad, either individually or collectively.

Reasonable progress has been made in upgrading the academic qualifications of AMK staff. There should be an evaluation of the effects of the qualification transition period, including whether it has led to a loss of key staff members. The emphasis on formal academic qualifications presents the risk that the academic values of the universities could displace the practical and professional focus of the AMKs. If Masters' level programmes were to be developed in AMKs, they would offer a route for AMK graduates to become AMK teachers.

To ensure that future development of higher education in Finland sustains diversity and in particular the distinctive nature of education in the polytechnics, will require the use of a wide range of instruments of policy.

A number of factors, over which the Government has less direct control, will affect the outcome of future policy, and raise questions about the nature of the longer-term development of the sector. The principle of maximum individual mobility within a structured system raises questions of transfer between sectors of the higher education system. In the context of the Bologna Declaration (1999) these are now fundamental questions for Finnish higher education. The policy to permit the polytechnics to put forward proposals, on an experimental basis, to offer postgraduate, post experience, programmes has been highly controversial. One way of clarifying the difference of function between the postgraduate programmes in the two sectors would be by using the formal title of Professional Masters (perhaps MProf) for those in the polytechnics – reflecting their post-experience character and professional orientation. The concept of lifelong learning implies radical rethinking about the whole education system and this will have implications for higher education; the traditional "front-ended" model of higher education may no longer be valid. The polytechnics are well placed to act as a key sector in the development of lifelong learning in Finland, but its future role will depend on the development of a range of system-wide features. Finland may have to consider, sooner rather than later, if other forms of funding of higher education than through taxation are necessary. It may be also appropriate for foreign students to make an appropriate contribution for the higher education they receive in Finland.

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PART II

Chapter 8

Introduction

Abstract. *Chapter 8 introduces the examiners' report. It describes the context and focus of the review and the overall structure of the report.*

This report is based on an examination of the Finnish policy to establish in the early 1990s a sector of vocationally/professionally oriented higher education in institutions called *Ammattikorkeakoulut* (AMKs) or "polytechnics". (Although the AMKs are not strictly comparable with institutions of the latter title in other countries, for example the UK, the term polytechnic is widely used in Finland to describe them to outsiders and is so used in this report. In offering courses of three and a half to four years leading to Bachelor's level degrees, AMKs most resemble the *Hogskoler* in Norway and Denmark, the Dutch and Flemish *Hogescholen* and the German *Fachhochschulen*.)

Finland has not been short of OECD examinations of its higher education policies. A policy review in 1981 (OECD, 1982) raised the issue of establishing a non-university sector. A further examination of higher education in 1994 applauded the developments that had subsequently taken place (OECD, 1995, p. 152). Although the Finnish government made permanent its experimental AMKs in 1995, the current Government undertook to review developments, with a view to further legislation in 2002. The current OECD policy review is part of this process.

This examination started with a preliminary visit to Finland by the Rapporteur and Secretariat in May 2001, which established the main issues for consideration and the main groups and individuals who would be consulted. The team of examiners visited Finland for ten days in October 2001 and undertook a demanding programme of visits and discussions. Seven of the polytechnics in different regions and with different forms of ownership were visited, as were a number of universities. The Rapporteur of the OECD team also visited a further polytechnic. The team had extremely useful discussions in all of these with a wide range of managers, owners, teaching staff and students. It also met: representatives and groups of the social partners (both employers and employees); small- and large-scale employers; local authorities, regional and provincial agencies; the Association of Finnish Local and Regional Authorities; student unions; teacher unions; the polytechnic rectors and owners; university rectors; the Higher Education Evaluation Council; officials of the Ministry of Education, and of other relevant Ministries. Finally it was able to meet a former minister, the current minister of Education and the Parliamentary Committee for Education and Culture.

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The examiners were impressed in all of the visits and discussions by the directness and openness of respondents, and by the considerable efforts made by individuals in presentations of their work, ideas and institutions. It goes without saying that they were also extremely grateful for the hospitality and entertainment that they were offered.

They wish to record the quality and clarity of the background report prepared by the Ministry. It made clear the main issues and greatly assisted the examiners' understanding of the Finnish system.

8.1. The context of this review

The polytechnic policy was part of the overall government strategy, in the context of changing economic and geo-political circumstances and severe economic decline in the early 1990s, to develop a "knowledge economy". The polytechnics are intended to concentrate on the education and training of "high quality experts in working life" (Ministry of Education, 2000a, p. 1). The main aims of the policy included:

- providing an alternative route into higher education with a more practical emphasis, alongside the universities.
- increasing the international comparability of vocationally oriented higher education in Finland; AMKs offer vocationally and professionally oriented courses of around three and a half or four years leading to a Bachelor's level degree.
- strengthening regional development (many AMKs are owned by municipalities), and co-operation with SMEs.

The 1995 legislation made permanent the experimental system and the AMKs initially set up. By the time of the visit, the AMK policy had resulted in the creation of some 29 higher education institutions by amalgamations of about 215 schools and colleges, which hitherto had offered mainly postsecondary level vocational education. By 2004, there will be 25 000 entrants annually to the AMKs, representing about two thirds of those entering higher education. The remaining students will be in the 20 universities.

This review is thus timely, not only in relation to the commitment to further legislation, but also because it is now possible to assess the outcomes of the initial development phase of the AMKs and to give thought to the situation they now face as established institutions. Although some AMKs have had this status only for a few years, it is important to assess the progress of the sector at an early stage; experience from other countries (*e.g.* Pratt and Burgess, 1974) shows that initial development may not be in line with policy intentions and may set an irreversible pattern for the longer term.

8.2. The focus of the review

This review is intended to assess how the "dual" system is working in Finnish higher education, and the implications for potential future developments. The terms of reference of the review focus on the polytechnic sector, and the examiners' work has concentrated on this. The AMK sector cannot, of course, be considered in isolation from the rest of the education system, particularly adult education, the universities and upper secondary education, nor indeed from the wider economy and society. The examiners were advised by a number of respondents in Finland of the need for close articulation between the two higher education sectors and with vocational and adult education, and of weaknesses in aspects of secondary education. However, whilst the examiners have taken into account the implications of the development of the polytechnics for these sectors, and comment on issues in these sectors which have arisen from their consideration of the polytechnic policy, they were not the main focus of the review. In any case, as the background report notes, there are a number of other studies and working groups examining a wide range of aspects of the education system generally, and of higher education in particular.

8.3. The structure of this report

The report first sets out briefly (in Chapter 9) the key features of Finland's recent history, particularly its bold response to powerful external economic and geo-political changes in the late 1980s and 1990s. It then (in Chapter 10) offers an assessment of the reforms to date in the AMK sector. In the light of the conclusions about the success of this policy, the report discusses the future scale and structure of the whole higher education sector in Chapter 11.

Chapter 12 discusses a number of key policy issues for future development of the AMK sector. Whilst, bearing in mind the relevance of the report to the legislative process, the examiners make recommendations about legislation, they also refer to the importance of a wide range of other, more subtle, instruments of policy in securing future development. The report concludes (Chapter 13) with discussion of a number of wider issues which will affect the future development of the AMK sector – and of higher education in general in Finland – and which will need to be addressed, not only by the Government, but by all those concerned with the system.

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PART II

Chapter 9

Polytechnics in Context

Abstract. *Chapter 9 examines the historical context for the reforms in the Ammattikorkeakouluts (AMKs) (the polytechnic system). It considers the economic pressures of the early 1990s, Finland's economic and education performance relative to other countries, and Finland's goals with respect to internationalisation of higher education.*

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If polytechnics are the solution, what were the problems? The terms of reference outline the broad questions that guided the examination by the review team. But before considering the responses, it is helpful to understand why those questions are being posed. To do that, we briefly review the historical and institutional context of the AMKs, as well as the international context in which Finnish higher education finds itself.

9.1. Polytechnics in Finland: the historical context

The history of non-university sectors in OECD member countries varies from country to country in terms of the age of the institutions, their antecedents, whom they serve, their scale, and their status in higher education. The Finnish *Ammattikorkeakoulut* are unusual. They emerged under exceptional circumstances, created and growing to almost full size in the 1990s, largely in response to – and certainly in the context of – developments and events that put intense pressure on Finnish society, the economy, and the education and training systems. The AMK policy was triggered by a belief that the AMKs could play a pro-active role in long term structural change to position Finland as a leading player in the "knowledge society".

In the early 1990s the Finnish economy underwent wrenching changes following a number of important structural shifts, including the disappearance of Finland's status as one of the main western gateways to the Soviet Union's economy. Output growth dropped from an annual rate of 5.1% in 1989, to 0% in 1990, and then plunged to –6.3% in 1991. Unemployment rose from 3.2% in 1990, to 6.6% in 1991, peaking at 16.6% in 1994 (OECD, 2001d). The steep rise in unemployment fell harder than expected on more qualified people. In the mid-1980s, those with tertiary qualifications were nearly eight times less likely to be unemployed than those with less than a secondary education, by 1991 they were only three to four times less likely to be unemployed. Among 20-24 year-olds, those with tertiary education were only half as likely to be unemployed.

Sensing the magnitude and irreversibility of the structural changes, the Government opted for a broad range of reforms, aimed at fiscal restraint, improving labour productivity and more generally increasing competitiveness (Presidential Working Group on Employment, 1994). The package implied a

high-wage strategy for increasing economic output, reducing unemployment and raising productivity by promoting knowledge-intensive business and industry.

Education was identified as one of the major policy tools for accomplishing this transformation in the economy. The Government set out to double participation in higher education by the end of the century, and to transform the nature of higher education output by expanding and upgrading advanced vocational and technical studies (see OECD, 1995).

As part of this strategy, several non-university higher education institutions – *Ammattikorkeakoulut* – were established on an experimental basis in 1991 in an attempt to provide education and training that was more advanced and up-to-date than the programmes offered by the traditional vocational institutions, while being more practically oriented than in the universities. By the mid-1990s, AMK enrolments comprised about 15% of total higher education enrolments, and nearly half of all new students. In 1995, on the basis of favourable evaluations by national and international authorities, the decision was taken to make the new system permanent. At that time, the Ministry of Education anticipated that the AMKs would enrol roughly three-fifths of new higher education students in 2000 (Ministry of Education, 1996, pp. 33-34, 79-86, 103). The system hit the mark, enrolling more than 58% of all new tertiary education students in 2000 (background report; university data from AMKOTA database).

The AMKs were not the only features of the government's higher education strategy. Another aspect of the policy was to strengthen ties between higher education institutions and enterprises, as a means of meeting the changing qualification requirements of employers, improving the capacity for research and development (R&D), and shortening the time needed for its application. Centres for continuing education had been established in the 1970s, and were found in all universities by the mid-1980s. They grew rapidly in the late 1980s and early 1990s, concentrating increasingly on providing longer-term programmes of study, many of them for labour market authorities. By the early 1990s, nearly a third of total funding for the centres was coming from labour market programmes (Ministry of Education, 1996, pp. 64-66).

There was strong support for strengthening higher education's capacity for research and development as part of the overall strategy: "There is widespread consensus among Finland's political parties, and within the private sector, that the economic future and social well-being of the country can only rest on a strong foundation of education, high-quality research and know-how" (Ministry of Education, 1996, pp. 64-66). Research funding passed 2% of GDP in 1991 and reached 2.7% in the late 1990s. The overall strategy has been to increase the number of research personnel, whether in universities,

private research institutes or private enterprises, and to ensure that innovation flows more quickly from government-supported research into industry. It was expected that this would be accomplished by: closer links between university researchers and industry, more joint industry-university funding for training and research projects, and an enhanced capacity of the growing polytechnics for product development and innovation services (Ministry of Education, 1996, pp. 66-73).

It is not possible in this review to set out the effect of all these initiatives on subsequent performance. But by all appearances, the general directions taken in the early 1990s have resulted in the achievement of the Government's main policy aims. The overall unemployment rate declined from 16.6% in 1994 to 9.8% in 2000, while overall employment grew by 14%. Growth in real GDP moved from –6.3% in 1991 to –1.1% in 1993. Since then it has ranged between 4.0 and 6.3%, consistently exceeding the OECD as well as the European Union average (OECD, 2001a).

Indeed, one might conclude that the government's proactive stance did more than simply pull the country out of a cyclical slump; it contributed to fundamental restructuring of the Finnish economy. While the recovery in the early 1990s was driven in substantial part by an export boom nurtured by the depreciation of the Finnish Mark and wage restraint that improved the price-competitiveness of exported goods and services, it benefited also from successful penetration of emerging markets (including markets for high-technology goods and services) by Finnish industry. Thus between the 1980s and the 1990s, the metal and engineering share of total exports rose from 25 to 40%, while the forestry and paper products share declined. Within the forestry and paper sector, there was a shift from primary goods to manufactured goods with higher value-added. Moreover, while the investment share of GDP declined from about 25% to 15% in the mid-1990s, investment shifted towards smaller, more flexible, and skill-intensive production units (OECD, 1997, pp. 1, 14, 58). By the late 1990s, Finland was a leader among OECD countries in availability and application of ICT, such as internet and mobile telephones, and in the export of ICT goods (OECD, 2000).

9.2. Finland in international context

In reviewing what has happened and what might happen with the AMK sector, Finland cannot be examined simply in relation to its own history and the effectiveness of government in achieving policy objectives. It has to be viewed in relation to other countries. In other words, although there has been remarkable progress in Finland, much of it in the face of particularly adverse conditions, there still remains the question of whether Finland and the AMKs are doing well enough to survive in a global society. Indeed, it is important to

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view Finland's AMK and the larger education system in an international context not just because Finland is so interdependent with other countries, but because the public authorities have vigorously committed the AMKs to functioning on a European and international level.

Finland is exceptional in many respects in comparison to other OECD countries, but similar to the other Nordic countries (see Table 9.1). Its population, small relative to its land area, is comparatively older, better educated, better paid, and more heavily taxed. Though the unemployment rate is currently above the mean for all OECD member countries, it was comparatively low before the crisis of the early 1990s, and has been reducing steadily since then. The proportion of the population that is foreign born is relatively small.

Table 9.1. **Main features of Finland compared to other countries**

Data for 2000 unless otherwise indicated

Characteristics	Finland	OECD
Population density (inhab./km^2)	15	**32**
Population total (x 1 000)	5 181	**1 120 423**
% under 15	18.1	**20.4**
% 15-64	66.9	**66.4**
% 65 and over	15.0	**13.2**
Foreign population[1]	1.8	
Life expectancy at birth (1999)	81.0	
Women		
Men	73.8	
Labour force (x 1 000)	2 609	**530 663**
Female participation rate in %	72.2	**60.3**
Foreign labour force in %	1.6	
Unemployment rate in %	9.8	**6.2**
GDP growth in %		
(2000-2001)	0.7	**1.0**
(1991-2001)	2.9	**2.8**[2]
GDP per capita in USD (using current PPPs)	25 900	**24 600**
Total tax receipts as % of GDP (1999)	46.2	**37.3**[3]
After tax income of average production worker (spouse +2 children) % as of gross pay	66.4	**79.5**
Gross domestic expenditure on R&D as % of GDP	3.37	**2.24**
Public education expenditure on institutions as % of GDP (1999)	5.75	**5.00**
Adults 25-64 with upper secondary education or more in % (1999)	71.5	**62.0**

1. Percentage of the population that is foreign born.
2. 1992-2001.
3. Unweighted.

Source: OECD (2001e), OECD in *Figures*, Paris.

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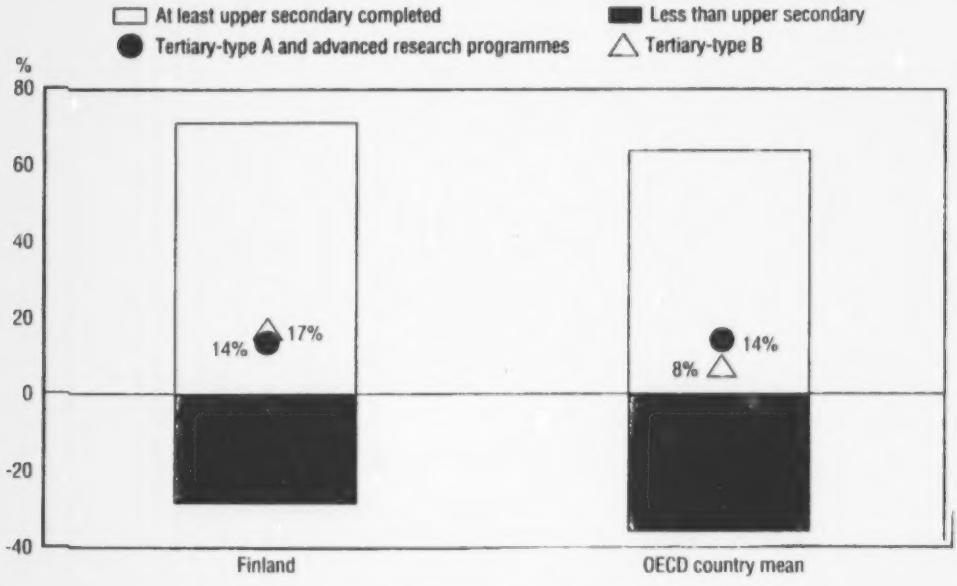
9.3. Expanding tertiary education – developments elsewhere

Comparatively speaking, Finland has a well-educated population. It has a substantially smaller proportion of the population with low levels of attainment (less than upper secondary completed) than most OECD countries, and it is well above average in terms of the proportion with tertiary qualifications (see Figure 9.1). This comparative edge is not a recent development. Its older people are also substantially better educated than those in most other countries. But the large overall advantage is due principally to the fact that women in Finland are far more likely to have a tertiary qualification than the average for women in all OECD countries (see Figure 9.2).

Figure 9.1. **Educational attainment of the population (25 to 64 years of age) in Finland and in OECD countries, 1999**



Source: OECD (2001b), *Education at a Glance – OECD Indicators*, Paris.

Another important feature of the comparative edge in educational attainment that Finland enjoys is the composition of its tertiary qualifications. In differentiating between academic and non-academic qualifications ("tertiary type A" *versus* "tertiary type B" under the ISCED nomenclature) (see Figure 9.1), the proportion of the Finnish population with academic qualifications is equal to the average for all OECD countries; the proportion with non-academic qualifications is double the OECD average. These figures may overstate the Finnish advantage in tertiary qualifications: because the AMK sector was only recently created, nearly all those with "tertiary type B"

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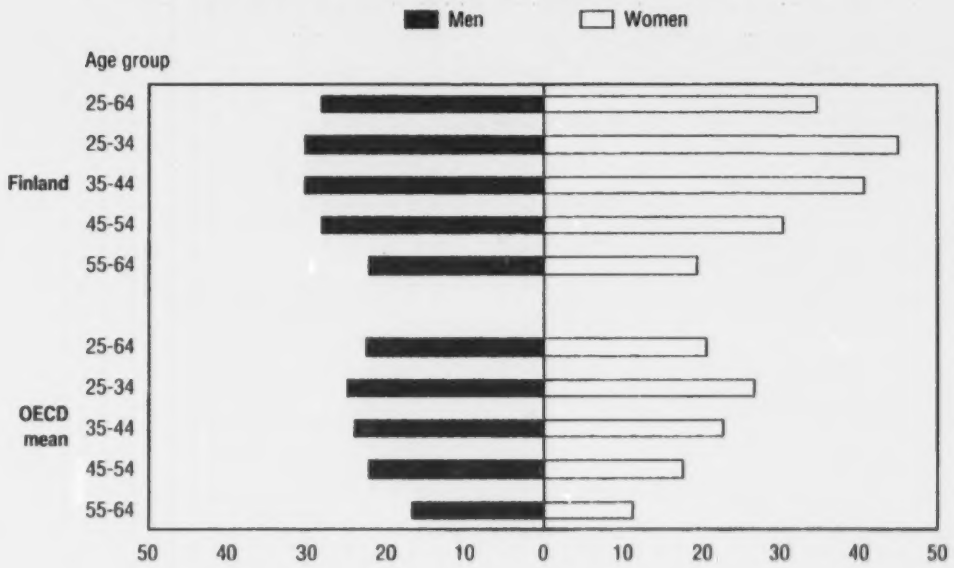
Figure 9.2. **Percentage of the population that has attained at least tertiary education, by age group and gender, 1999**



Source: OECD (2001b), *Education at a Glance – OECD Indicators*, Paris.

qualifications gained them in the postsecondary institutions that were eventually upgraded by the AMK reform. Thus the attainment figures include qualifications acquired in studies that were of shorter duration than the current AMK studies, and, overall, were more mixed in terms of quality.

9.4. Labour market and other economic considerations

It is possible to gain some insight into the nature of those tertiary qualifications by comparing the labour market experience of Finnish graduates to the average for all OECD countries. Figure 9.3 presents data comparing the earnings and unemployment rates of Finnish graduates to the average of graduates in all OECD countries. The data suggest that the earnings premium for people with tertiary type B qualifications is in line with the average for all OECD countries. The advantage over those with less than an upper secondary education is comparatively less in Finland than in the OECD countries on average. This more modest premium might be explained in some part by the more compressed wage distributions found in the Nordic countries. However, as the premium for acquiring *academic* qualifications is substantially higher in Finland than the average for all OECD countries (14 and 8% higher for men and women respectively), that explanation would appear to hold only at the lower end of the wage structure. The data on unemployment by level of educational attainment suggest a similar pattern, with a comparatively small increased risk

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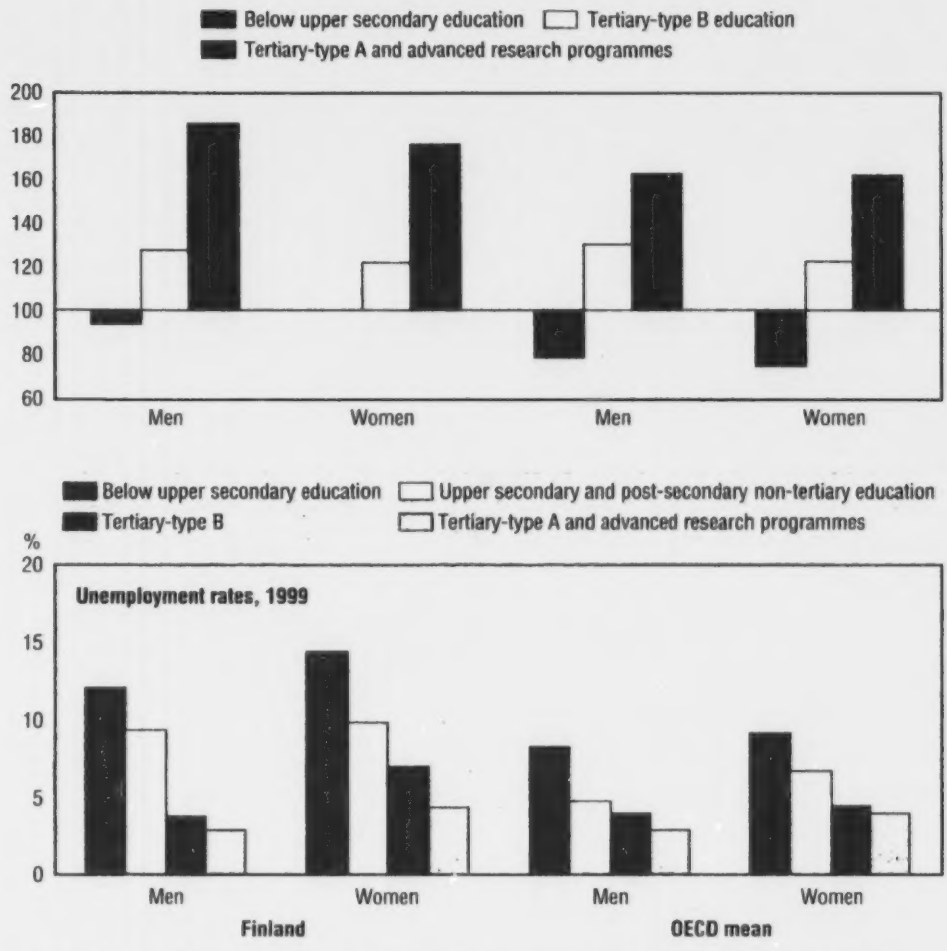
Figure 9.3. **Labour market outcomes by level of education for the 25-64 year-olds, late 1990s**



1. Data for OECD mean are averages of OECD member countries for most recent years available.
Source: OECD (2001b), *Education at a Glance – OECD Indicators*, Paris.

of unemployment for poorly qualified people and a comparatively reduced risk for people with a tertiary type A qualification in Finland. There is one difference, though, and that is that people with a tertiary type B qualification do better relative to others in Finland than do similar qualified persons on average in all OECD countries; moreover the premium is greater, on average, than the earnings premium.

Another factor that might influence strategic decisions about the nature and availability of tertiary education is the structure of the economy with respect to firm size. As smaller firms invest less in human resource development (see OECD, 2003), it can be argued that an economy that is dominated by small firms depends more on formal education systems, such as AMKs, as a source of technically

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oriented education and training. Table 9.2 provides data on the distribution of enterprises, employment, and turnover (sales) by firm size, for selected OECD countries. As the data are not disaggregated to the regional level, the view they provide is crude. But they do suggest that economic activity in Finland is oriented more towards medium and large-sized enterprises than in the other countries considered.

Insofar as the appropriateness of targets for increased participation in tertiary education can be judged on the basis of labour market and other economic considerations, it would appear from some fairly crude indicators that there is substantial unsatisfied demand for a more highly qualified labour force in Finland. Higher education is rewarded better (with respect to earnings and employability) in Finland than it is on average in all OECD countries. Furthermore, judging from other indicators such as international competitiveness and unit labour costs, the Finnish labour force cannot reasonably be characterised as showing signs of being overqualified nor does employment show symptoms of under-utilisation of highly qualified workers. In other words, although Finland has a comparatively highly qualified population, the stated policy for raising qualifications levels still higher by vigorously upgrading the scale and quality of polytechnic education seems defensible in an international context. Discussion in Chapter 11 explores this question further on the basis of evidence and views from within Finland.

Table 9.2. **Small and medium-sized enterprises in Norway and selected OECD countries**

	Manufacturing sector				
	Finland 1996	Austria 1995	Belgium[2] 1997	Norway 1995	Sweden[2] 1996
	%				
Distribution of enterprises by size					
1-9 employees	84.5	67.4	67.7	80.8	71.3
10-99 employees	13.1	28.1	28.3	16.5	24.8
100 employees and over	2.4	4.5	4.0	2.7	3.9
Distribution of employment by enterprise size[1]					
1-9 employees	8.8	9.7	8.1	12.2	8.5
10-99 employees	22.4	28.8	29.8	30.1	24.5
100 employees and over	68.8	61.5	62.1	57.7	67.0
Distribution of economic turnover (production) by enterprise size					
1-9 employees	4.3	4.9	5.3	6.7	5.2
10-99 employees	15.2	21.0	23.3	25.4	19.2
100 employees and over	80.4	74.0	71.4	67.7	75.7

1. Excluding sole proprietors in Sweden.
2. Excluding size class "0 salaried employees" for enterprises and production.

Source: OECD database on statistics relating to small and medium-sized enterprises.

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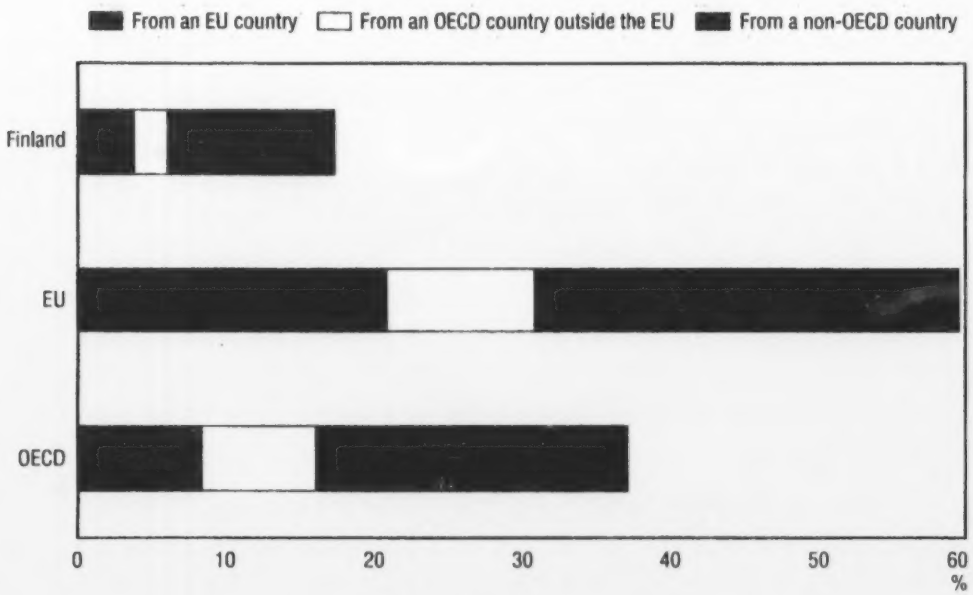
9.5. Internationalisation

The Finnish authorities are committed to strengthening the international dimension of the AMK system by encouraging enrolments of non-Finnish students, and encouraging Finnish AMK students to pursue some of their studies outside of Finland. Where does Finland presently stand relative to other countries? Figure 9.4 presents some comparative data on foreign students as a share of total enrolments, indicating where they come from, as well as data on students studying abroad. (The data refer only to students taking their whole degree programme in Finland or abroad, so do not include

Figure 9.4. **Foreign students in Finland, European Union and OECD countries, 1998 (per 1 000 students enrolled)**



Source: OECD (2001f), Trends in International Migrations, Paris.

the substantial number of exchange students taking part of a programme elsewhere – see Chapter 5.4). The data show that relative to the EU and OECD as a whole, Finland tends to enrol relatively few foreign students, but sends relatively more of its nationals abroad to study. But within these aggregate patterns are some interesting twists. Despite the overall lower recruitment of foreign students than other countries as a group, a higher proportion of the foreign students it does enrol come from outside the EU and, indeed, the OECD. This is, in part, a vestige of Finland's past close relationship with the former Soviet Union. It is worth noting too that many of the Finnish students who study abroad do so in EU countries. Though the data do not permit differentiation between sectors of education, these patterns could have

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interesting implications for the strategies to increase the international orientation of the AMK sector. Finland has evidently established a reputation in non-OECD countries that might provide a basis for a Finnish "niche" in international markets for higher education. Considering the fiscal implications of strategies for further internationalisation of AMK, it would appear that under the current arrangements Finland is probably coming out ahead because it is a net exporter of students. Though it does not charge foreign students any fees, the vast majority of Finnish students studying abroad do so in European Union countries, where they are entitled to the same treatment regarding fees (which tend to be low) as nationals in those countries.

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PART II

Chapter 10

The AMKs: an Assessment of the Reforms to Date

Abstract. *Chapter 10 assesses the reforms that created and fine-tuned the Ammattikorkeakouluts (AMKs) since the early 1990s. It examines the teaching and R&D roles and identity of the AMKs in the higher education sector, and how well the new sector has succeeded in meeting needs of students, communities and regional governments.*

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It is clear from the background report, from other statistical and qualitative data available to us and from our visit to Finland that the AMK policy has been remarkably successful. There has undoubtedly been a period of rapid development and change. The evaluation reports of the Finnish Higher Education Evaluation Council (FINHEEC) frequently use the term "dynamic" to characterise the experience of the polytechnics. The new institutions, developed from existing postsecondary vocational institutions, and building on their experience, now offer about 150 degree programmes in seven broad sectors of study. The AMK sector caters for the majority of entrants to higher education, and there is no evidence of a decline in the attractiveness of the AMKs to potential students.

Although it is less than ten years old, there is clear acceptance of the existence and value of a sector of higher education with a distinctive educational mission. Much of the controversy at the time of the establishment of the polytechnic policy has diminished. One university rector referred somewhat euphemistically to "hectic discussions" of the early days; now the situation is "more settled", though there is still controversy about certain aspects of the future development of the sector, such as the R&D function of the polytechnics, and the postgraduate programmes.

The background report records the seven main goals of the AMK reform that were set out in the 1990s. Overall, we believe good progress is being made towards achievement of these goals:

- The standard of education provided has been raised. The programmes offered are distinctively structured, longer and lead to a Bachelor's level degree. Qualifications of staff have been increased.
- The programmes respond to new demands for vocational skills. They are designed in co-operation with the labour market, have a practical emphasis and are interdisciplinary in nature.
- The attractiveness of vocational education has been increased, so that the polytechnics are now able to recruit the majority of entrants to higher education, and about 70% of their entrants have a matriculation qualification from upper secondary education.
- International comparability has been improved, not least through the formal establishment of Bachelor's degree level programmes, but also in

terms of their content, and as demonstrated by their attractiveness to students from other countries.

- The operating capacity of the vocational sector has been improved, with larger units formed by amalgamation of existing institutions, as well as by the steady increase in number of student places.
- The administration of the institutions has been de-centralised, with the creation of polytechnic boards with autonomy in a range of academic and administrative matters; the system has been rationalised, with a reduction in number of institutions from over 200 to 29.
- The polytechnics are distributed throughout Finland, adding to the range of higher education provision in the regions, and are contributing to regional development.

This is not to say that there are no areas of concern – we refer to some of these below and in subsequent chapters – and a need for further development of institutions, programmes and pedagogy based on a coherent and distinctive approach. But overall, the evidence offered to us suggests that the programmes generally are relevant to working life, innovative, and well received by employers and students. This chapter summarises our assessment of the educational contribution of the polytechnic sector. Subsequent chapters discuss policy, organisational and funding issues.

10.1. A distinctive sector in higher education

Central to the AMK policy is the development of a distinctive approach to higher education. The 1995 OECD report noted the need for measures to help "foster a viable concept of the *Ammattikorkeakoulut* in its own right" (OECD, 1995, p. 203). We believe that considerable progress has been made in this regard. We were offered convincing accounts of innovative and thoughtful approaches to teaching and learning in a number of institutions. The programmes offered in the AMKs differ significantly from those in the predecessor institutions. There is evidence that the changes have been enthusiastically embraced by staff, and of the development of new programmes, so much so that the Ministry has been forced to reduce and rationalise the range of titles offered.

The sector has benefited from scrutiny by the Finnish Higher Education Evaluation Council (FINHEEC) and its reports have documented both strengths and weaknesses in the institutions concerned. A further study financed by Sitra (the Finnish National Fund for Research and Development) (published as the OECD team was leaving Finland) also offers a comprehensive and valuable report on the achievements and disappointments to date (Raivola *et al.*, 2001). These sources, too, offer evidence of the adoption of new pedagogic approaches and of a focus on team and project work aimed at developing

students' problem-solving skills. We note the positive comments of FINHEEC about the concepts of quality and quality work that have been developed in particular institutions that it has evaluated, and the leadership development that has taken place. Raivola *et al.* (2001, p. 95) also note that "In the best cases the polytechnics have constructed new forms [of institutional culture] which really integrate educational sectors and the industrial sector". There will be an important role for FINHEEC in the future development of the sector (see also Chapter 12).

However, there is a need for further dissemination of the developed thinking and good practice that exists in different institutions (as a number of FINHEEC reports as well as the Sitra report have noted). We echo the FINHEEC reminder that the polytechnics (and universities) themselves bear the main responsibility for their development in this regard (Fonselius *et al.*, 2001, p. 30). Raivola *et al.* (2001, p. 95) also record "... the utilisation of multidisciplinarity needs innovative structures and new pedagogic thinking". With the concern with professionalism, and a focus on practical problem-solving skills based on a sound background of academic knowledge, an educational philosophy centred around the notion of the "reflective practitioner" (Schon, 1983, 1987) is apparent in much of the education offered by the polytechnics. This may form a useful focus for further development of the "viable concept" of the AMK sector.

10.2. Quality and acceptance of the sector

The acceptance of graduates from the polytechnics by the labour market and by other educational institutions is a further (though not necessarily definitive) indicator of the quality of polytechnic education. The background report (Chapter 12) offers evidence on the employment of polytechnic graduates, which suggests that they are generally accepted by the labour market. The comparative data for polytechnic graduates and holders of university master's degrees show that a slightly higher proportion of polytechnic graduates are unemployed, but it must be remembered that the comparison is not between qualifications of equal level. The OECD team was told of dissatisfaction by some employers with the skills offered by some graduates. The problem appeared to be that these employers' expectations of the extent of practical skills that polytechnic graduates would be able to demonstrate immediately on graduation were somewhat unrealistic. A three and a half-year academic programme, however practical in orientation, is necessarily limited in the range of practical skills it can develop. This is not, of course, a phenomenon restricted to Finland, and it points to a problem faced by all professionally-oriented higher education – of equipping graduates with underlying knowledge, generic skills and capabilities to adapt to future change (as often requested by employers) rather than offering a narrow

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training to meet immediate (and hence usually ephemeral) skill needs. Higher education should not be merely "instrumental".

There were concerns, too, about the effectiveness of work experience periods and its integration into the curriculum, and of the involvement of employers in final year projects. Similarly, we heard evidence of unrealistic expectations of polytechnic graduates about their employment prospects. All of these, again, are familiar problems with this kind of higher education in any country, and whilst we do not dismiss them, we have no evidence that Finland's AMKs suffer from them more than do comparable institutions elsewhere.

The acceptance by the universities of AMK qualifications also presents some concerns. There is considerable variation of universities' recognition of AMK credits when students seek to enter a university Master's programme with an AMK degree. The number of credits recognised varies from 35 up to 100, out of a total of 140-160 credits. There are variations between fields, with business administration seemingly the most restrictive, technology the most "generous". In many cases, the number of credits recognised by the university seems extremely low. The evidence we have received suggests that the disparities do not usually arise from a real variation in standards. Rather, they reflect insufficient knowledge in most university departments on the standards of AMK education, and a lack of a national framework for credit transfer between the sectors – and probably in some cases, simple prejudice. (We return to this issue in Chapter 13.)

We were told, too, mainly by respondents in the universities, of concerns that the curriculum in AMKs was a simply a "re-badging" of that offered in the institutions when they were in upper secondary vocational education. By contrast we were also told in other places that the AMK curricula sometimes duplicated those of universities in some fields. Although it is possible, it seems improbable that both contentions are correct. They reflect, again, a general lack of knowledge of the AMKs' programmes, and it must be said, some fear of polytechnic "infiltration" into traditional university areas. Our review could not investigate curricula in detail, but these concerns point to a need for future legislation to continue to make clear the distinctive nature of the polytechnics' mission and programmes. (We return to this issue in Chapter 13.)

The AMK institutions that we visited indicated that considerable thought is given to consultation with employers and other stakeholders about the content of programmes, and to teaching methods appropriate to professionally-oriented higher education. We note, however, that a number of FINHEEC evaluations commented on the need for the development of a more pro-active approach by AMKs to external partners. We learned, too, of inconsistencies and

inefficiencies in the provision of courses and programmes. There is, no doubt, scope to identify common units that could underpin a range of programmes, and a need to disseminate good practice in this respect.

10.3. Meeting student needs

We have already noted the way that the polytechnic sector has grown to meet substantial demand for student places. The background report (Chapter 12) shows that there is substantial demand for places, although this now appears to have stabilised. We note that the polytechnics recruit a substantial proportion of students from their local region, indicating success in meeting regional needs. However, we heard concern that access in some cases may be limited because of the detailed controls over numbers of places in each subject area (and we make our proposals for more relaxed control in Chapter 12). There are also problems with the location of programmes and parts of programmes between components of multi-site polytechnics, making it difficult for students to study the optional subjects they would prefer. These problems point to a need for greater development of distance learning options, of consideration of the number and distribution of polytechnics and for co-operation between polytechnics and universities. We return to these issues, too, in later chapters.

The AMKs have made progress in accommodating a variety of students with differing backgrounds and abilities, including adults entering higher education for the first time. One fifth of all polytechnic courses are aimed at adult students (background report, Chapter 12). If they are to increase access to higher education, the AMKs must accommodate a wider range of students than those who have traditionally entered higher education. Widening participation invariably raises questions about the ability of students to complete their courses of study. The background report indicates that retention and completion rates are high, and although the official account may give a slightly optimistic interpretation of the statistics, it is evident that most polytechnic students complete their studies within the normative time, and certainly more than do students in universities.

The review team heard several – sometimes contradictory – stories about dropout from the AMK sector. Official statistics show a dropout rate of less than 10%, yet figures as high as 50% were mentioned. Box 10.1 sets out some data on dropout from the AMKs. Considering these data, our conclusion is that even though there may be room for improvement, the real dropout rate throughout the four-year course of study is probably less than a quarter, and this should not be considered alarming. The Finnish authorities should try to paint a realistic picture about dropout to preclude some of the misinformed discussion which could undermine the AMK reform.

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Box 10.1. **Some data on dropout**

A simple method for measuring dropout (or its opposite: pass rates) is to compare the number of graduates in a specific year with the number of new entrants the relevant number of years earlier. It seems that some of the concern about dropout rates (as in the background report) is based on calculating the ratio between *new entrants and graduates in the same year*, which is misleading if the number of entrants is increasing.

Thus, using data from the AMKOTA database, in 2000 there were 33 000 new entrants, while the number of graduates was 14 100. This gives a pass rate of only 43%.

But most of those who graduated in 2000 entered the system in 1996, when the number of entrants was 19 100. Calculated in this way, the pass rate is 74%.

The AMKOTA database states that 7% of students drop out. That probably means that 7% leave from one year to the next. During a four-year course of study, $7 \times 4 = 28\%$ will drop out during the whole programme. This brings us closer to the pass rate of 74% calculated above.

Even the 7% may overestimate the dropout rate. This figure includes students who change programme or transfer to another AMK or university, as well as those who return to the AMK later.

The background report has analysed the reasons for dropout and it confirms some of the difficulties we were told of, for example the ability of some entrants from upper secondary vocational education to cope with the demands of the AMK programmes because of weaknesses in mathematics and science (we note this issue again in Chapter 13). But we were encouraged by evidence in AMK courses of provisions helping to develop study skills for students. We would encourage the further development of elements in the period of basic studies to enhance students' capacity to identify their strengths and weaknesses, both so that the institution can respond to them and so that students can begin to manage their own learning. We also see a need to continue with development of methods to accredit different forms of prior learning (APEL). Mass, or near universal, higher education systems have to accommodate an increasingly diverse intake of students with all kinds of unconventional and uncertificated knowledge, skills and abilities. It is important that these can be recognised and built on. In this context, a number of concerns that were expressed to us about the need for improved guidance

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and counselling and other student services are pertinent: the more diverse and unfamiliar students are with conventional higher education, the greater the need for such services.

10.4. Links with local and regional communities

The polytechnics have close links with their local and regional communities. For many AMKs these links are formalised through ownership by one or more municipalities, or through municipal involvement as shareholders of their limited companies, or by representation on the boards of the foundation-owned polytechnics. The variety of forms of ownership is a strength of the system, and offers the opportunity to learn of the strengths and drawbacks of the different systems. We comment in Chapter 12 on the some issues of governance that have arisen, but we can note here that the Finnish system has avoided some of the more serious disputes between institutions and municipalities that were, for example, so damaging to the British polytechnic policy (Pratt, 1997).

These forms of ownership have contributed, we believe, to assisting the polytechnics to make a contribution to regional development. As well as offering degree and other programmes in consultation with local and regional employers, the polytechnics have begun to establish a distinctive role in research and development. Much of their work in this regard, so far, has been through the final year projects conducted by students in association with (usually local) firms and employers. Many of the contacts and student placements are with SMEs, thus contributing to development in areas without major industries. However, there is substantial evidence that many SMEs do not yet fully understand the nature of polytechnic education, nor the contribution that polytechnics and their graduates can make to the SME sector and the region. There is clearly potential for further development of these links, to reflect the ambitions set out in Chapter 7 of the background report for the role of the polytechnics in innovation and regional development (which we discuss in more detail in Chapter 5). We have already noted that several FINHEEC evaluations also refer to the need for AMKs to be more pro-active in this regard. Direct involvement by AMK staff in research projects with companies and public sector employers is still somewhat limited. Employers in general do not yet appear to be approaching the AMKs for assistance with R&D projects. Nevertheless, some polytechnics have developed bids for EU projects in co-operation with other regional actors. There is scope in the polytechnics for development of "spin-off" companies and other entrepreneurial activities (and hence also new sources of income) arising from practically-oriented R&D work.

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10.5. The polytechnics' role in R&D

The polytechnics' role in research and development is currently in a substantial development phase. An important part of this work is based on students' final year projects, but as we note in Chapter 12, there has been growth of other R&D work in the polytechnics, currently involving expenditure of more than 30 million euros, much of it external funded. We note, too, the need for further development in this area.

Research and development in the polytechnics is a controversial issue. The Government's policy (Ministry of Education, 2000b) is that the polytechnics should contribute to producing new knowledge about working life and professional expertise, and they should develop applied R&D jointly with business and industry. There is scope here for the AMK sector to develop a distinctive approach to research, reflecting recent thinking about the development and transfer of knowledge. There is an understandable concern that the polytechnics do not simply become feeble imitations of universities in this regard. Often, however, the dominant model in Finland as described to us was the traditional notion that new knowledge is developed through "basic research" (in the universities) and it is then "applied" to practice. This has been described by Gibbons *et al.* (1994) as "Mode 1" knowledge production. The polytechnics are admitted to this process as intermediaries, helping industry to apply the knowledge developed in universities. We were offered an extreme version of this view by a respondent from the university sector describing how polytechnics and universities could co-operate in research: the polytechnic graduate could build the equipment and record the results, but it would be the university graduate who would undertake the analysis and modelling.

Gibbons *et al.* (1994) describe "Mode 2" knowledge production as a more accurate account of empirical reality, recognising that knowledge production takes place "... largely in the market..." (Scott, 1995, p. 145). It emerges from practice in the wider world: "Knowledge is not simply a predetermined input into the process of innovation. In advanced economies it is also an output" (*ibid.*). These distinctions between kinds of knowledge are not, of course, absolute, and some would challenge the simplicity of the distinction. There are elements of both in the two sectors; there will always be some overlap between the roles of polytechnics and universities in R&D, particularly in the technical and business universities. There is some recognition of a wide conception of knowledge production in the background report, which identifies government policies for competence development and the importance of expertise networks to promote innovation. The AMK sector has a crucial role to play, in helping to develop and articulate this practice-based, professional knowledge and bring it, as Eraut (1994) has put it, "under critical control".

Because, for a small country like Finland, it is necessary to concentrate public research infrastructure, research competence and staff, and public research funds in the university sector, it is important to reflect on the way in which the emerging but as yet undeveloped R&D function of the AMKs should be connected to this concentration of infrastructure, staff and money. The Finnish universities and larger companies have been innovative and successful in their R&D activities over the last ten to 15 years. The AMKs are still newcomers in this area. The AMKs still have to find their place or niche in the Finnish R&D landscape, but co-operation between institutions in the two sectors will be more likely, and more equal, if there is mutual respect. Some of the issues that the government and the institutions will need to consider for the development of R&D in the AMK sector include its funding, securing adequate staff both for doing and managing R&D, integrating R&D in the organisational structure, and the problem of relating the R&D ambitions and activities to regular teaching activities.

10.6. An overview of the reforms to date

We conclude that the polytechnics in Finland have developed into a distinctive, viable and valuable sector of higher education. There is still much to do to fully develop their distinctive educational philosophy, and it is early days, particularly for those institutions that have received permanent status only recently, and there are significant areas, as with all forms of higher education, for improvement. But from the evidence we have received, we see no need for fundamental changes in its basic trajectory. It is in this context that we turn in the next chapter to consideration of the future scale and shape of higher education in Finland.

10.7. Summary and recommendations

- The AMK policy in Finland has been remarkably successful. There is general acceptance of the existence and value of a sector of higher education with a distinctive educational mission, though controversy exists about the future development of the sector. In general, the programmes are relevant to working life, innovative, and well received by employers and students.
- There is a need for further dissemination of the developed thinking and good practice that exists in different institutions. An educational philosophy centred around the notion of the "reflective practitioner" may form a useful focus for further development of the AMK sector.
- The dropout rate throughout the 4-year course of study is probably less than a quarter, and this should not be considered as alarming. The Finnish authorities should try to paint a realistic picture of dropout rates to preclude some of the attempts made to undermine the AMK reform.

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- We would encourage the further development of elements in the period of basic studies to enhance students' capacity to identify their strengths and weaknesses, both so that the institution can respond to them and so that students can begin to manage their own learning. We also see a need to continue with development of methods to accredit different forms of prior learning (APEL).
- There is clearly potential for further development of R&D work in the AMKs, to reflect the government's ambitions for the role of the polytechnics in innovation and regional development. The AMK sector has the potential to develop a distinctive approach to research, helping to develop and articulate practice-based, professional knowledge.
- Although there are areas, as with all forms of higher education, for improvement, we see no need for fundamental changes to the AMK policy.

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PART II

Chapter 11

The Future Scale and Structure of the Higher Education System

Abstract. *Chapter 11 examines questions related to how large the higher education sector in Finland should be, and what form it should take. It considers the debate regarding the number of students who should go on to higher education, the number of Ammattikorkeakoulut (AMK) institutions, and the respective share going into AMKs and universities.*

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11.1. The future scale of the higher education system

There is considerable discussion and controversy in Finland about the Government's intentions about the scale of the higher education system. There is concern about the size of higher education in general, the level of student participation and number of funded student places, and about the size of the AMK sector in particular.

Much of the concern is misconceived. We frequently heard that the policy now is to offer places in higher education to 70% of the age group, but this figure does not appear in official policy statements. Given the confusion and temperature of the debate it is worth recalling what policy statements do say. Box 11.1 summarises these.

Both the 1994 OECD review (OECD, 1995) and the background report record the Government's intention, stated in 1995, to offer new places in

Box 11.1. **Student number targets**

The Ministry's Education and Research 1999-2004: Development Plan (Ministry of Education, 2000b, p. 20) does not offer a target percentage of the age group, but it records that the number of openings to be offered in 2004 in polytechnics will be 25 000 and in universities 19 000.

The background report notes that the supply at present corresponds to offering places to about 65% of the age group, and that assuming that about 80% of each cohort completes its education, just over half of the age group will complete higher education.

But it also notes that some students' entry into higher education is deferred for a year or two, and also that over 20% of new students were aged 25 and over. This means that dividing the number of new entrants to higher education by the numbers in the 19-21 age cohort does not give a measure of the actual percentage of the age group entering higher education.

Figure 9.2 suggests a somewhat lower percentage of those leaving upper secondary and initial vocational education and training to enter polytechnics and universities.

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higher education to about 60-65% of each new age group. We have not seen any policy document proposing a higher figure. The target of the Government is to meet not only demand from young newcomers to higher education, but also that from mature students enrolled for the first time, as well as from those re-entering the system. This target often has been interpreted as net enrolment, that seven out of ten from each age cohort should enrol in higher education. On several occasions, the review team was exposed to this interpretation. If there is no consensus about the interpretation of the quantitative target, the debate can be both confusing and an arena for hidden agendas. The Government should clarify this point.

Two points emerge from this. First, it is clear that debate about percentage points is sterile, and it distracts from the general policy commitment, reflecting a national consensus, to invest substantially in higher education. Second it is evident that Finland has already achieved a very high level of participation and that whilst the 2004 targets represent an increase on present numbers, the proposed development is incremental, not fundamental.

The issue of the number of places in higher education in general, and in the polytechnic sector in particular, remains contested, nevertheless. Considerable concern was expressed about the consequences of the 65% (or 70%) target. It was stated that increasing numbers of students not really motivated or prepared for their studies would lead to a drop in academic standards and increase dropout rates. Another worry was that increasing enrolment in higher education could lead to a mismatch between educational output and the needs of the labour market. Graduates from higher education would not get relevant jobs, and at the same time there would be a lack of manpower in both skilled and non-skilled jobs.

There is heated debate, too, about a more pressing need for graduates from upper secondary vocational education than from higher education. Raivola *et al.* (2001, p. 96) describe this sector as an "underestimated way to the labour market". Some of the employers' organisations, too, have produced survey evidence from their members suggesting that about 50% of future needs for qualified people would be from this sector, and a quarter or less from the polytechnics. Considerable caution needs to be exercised when considering such survey data. The surveys did not offer a complete cross-section of all sectors, particularly of the high growth, large scale and "high tech" sectors. Many of the employers in these associations were from small businesses and the service sectors. The representatives of large-scale and high growth sectors that we met were clear about the need for high numbers of higher education graduates, complemented by a decreasing need for upper secondary vocationally education graduates.

Even if the survey results are taken at face value, and the percentages of polytechnic graduates said to be needed are applied to total predicted demand, the data do not suggest a surplus of polytechnic graduates (nor, if a similar exercise is done, of university graduates); they indicate, instead, an acute shortage of graduates from upper secondary education. They thus echo the concerns of Raivola *et al.* (2001) noted in Chapter 10. The review team had neither mandate nor possibility of investigating education at the upper secondary level, but draws attention to the importance both of the tight connections between the two sectors, and of high quality upper secondary vocational training.

There is evidence from Finland's recent history to support an ambitious policy of investment in higher education, as we noted in Chapter 9. Its remarkable recovery from recession has relied on high levels of highly qualified people. The background report (see Table 1.6) notes that in 1997, a third of those in employment (and 40% of those aged 25 to 34) had received tertiary education. OECD (2001b) shows that 88% of men in the 25-64 age group and 86% of women with "Tertiary-type B" level of education, and 93 and 90% respectively of those with "Tertiary-type A" attainment, participated in the labour force in 1999. Chapter 9 notes that there is no evidence of over-qualification of the workforce, nor of under-utilisation of qualified workers. One of our respondents recalled the considerable resistance to earlier policies to increase access to higher education, which now is confounded by these data. They confirm the value of past investment in higher education.

Even doubts expressed as recently as in the 1995 OECD report have been overtaken by events. That recorded the examiners' view that "the aim to provide higher education for almost two-thirds of the age group is ambitious by international comparisons" (1995, p. 164). Yet it also noted – without criticism – the "firm general belief that Finland should base its economic and social future on high educational standards" (1995, p. 208). Indeed the report itself contained evidence that there was already demand at this "ambitious" level from students for higher education. It recorded increasing competition for higher education places: in the early 1990s, there were estimated to be 40 000 applicants for university places and the corresponding age group comprised about 65 000 people (1995, p. 161). In other words, even in the early 1990s, student demand was already equivalent to nearly two-thirds of the age group. As noted in Chapter 10, there is no current evidence of lack of demand from students for places in higher education in general, or for the polytechnic sector. Similarly, the employment rates for graduates from the polytechnics are increasingly buoyant, as the background report (Chapter 12) shows. We see no need for the Government to deviate from its current targets for overall student numbers, nor for those in the polytechnic sector.

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There is continuing evidence, too, of the changing nature of the labour market and the economy, as well as of the changing age structure of the workforce, which points to a continuing future need for high levels of highly qualified people, and which we discussed in Chapter 9. Although the representatives of employers that we met from both industrial and service sectors stated that their members currently expected that between one third and one half of new employees to have a degree from higher education, it would be unwise to base future educational capacity on the workforce needs of today. Higher education policy should have an investment perspective. Rather than being a concern of "over-education", a well-educated workforce should be regarded as an advantage for future development. A major OECD "thematic review" of tertiary education asked: "is participation by all or most people, at some stage in their lives, a worthy goal of policy?" (OECD, 1998, p. 101). It concluded, unequivocally, that "it is", and that "governments cannot reasonably stand in the way of the deeper forces which... continue to drive growth".

11.2. The future structure of the higher education system

Access to higher education in Finland has expanded strongly during the 1990s, not at least due to the growth of the AMK sector. Its student numbers increased more than three-fold from 1992 to 2000. Numbers in universities increased by less than 50% in the same period and the number of university Master's graduates has increased by less than 20% over the past five years. Even though the growth in the AMK sector is due to the upgrading of former postsecondary vocational institutions, these data from Finland, as well as experience in other countries, show the importance of a large non-university sector in achieving mass higher education, by diversifying the range of higher education possibilities on offer.

Thus, it is important that decisions about the future scale and structure of higher education in Finland are made on the basis of a view of the functions of the whole system. As the OECD "thematic review" of tertiary education stated: "tertiary education policy overall must address all major functions and goals" (OECD, 1998, p. 101). The decisions cannot be based on the assumption of the primacy of university education. When the polytechnics were still "experimental", it may have been possible to take this view. Now that they are permanent, and the Finnish Government, like many others, responds to social and individual demands that "have never been greater" (OECD, 1998, p. 101), it is not.

Indeed, the Government's commitment to the idea of the "knowledge society" means decisions about higher education, and the sectors within it, have to be taken in the context of the relationship with the wider society and

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economy and other agents – governmental and otherwise – involved in generating knowledge. The idea of the knowledge society raises questions about the role of the universities as well as of non-university institutions. Although this review focuses on the AMK sector, consideration of relative sizes of the sectors in higher education must be based on a view about the quality and appropriateness of offerings of both sectors. We have recorded our view of the strengths and weakness of the AMK sector and its relationships with the outside world; similar consideration will need to be made of the university sector. We note the need for change in university degree programmes to meet the needs of working life, recorded in the background report (Chapter 7), and other concerns, for example, about the duration of university studies.

In any case, it is hard to envisage the universities in Finland, alone, being able to offer higher education of the standard that they do, to such a high proportion of the age group – to say nothing of the issue of the appropriateness of such education for all those in higher education. There is a substantial consensus in Finland for provision of higher education different from that traditionally provided by universities, and aimed more directly towards the needs of working life. In the highly competitive, yet unpredictable, global economy in which Finland now finds itself, there is a need for high quality, but diverse provision.

It is important, in discussing higher education of different kinds, to avoid primitive distinctions. When discussing the roles and functions of the AMKs compared to the universities, many of our respondents described the AMKs as "practical" or "applied", with links to working life, while universities are "scientific". To some extent this is of course true, but far too simplistic. It is true that the AMKs generally are not "scientific" if by that we mean basic research and subject-oriented teaching. On the other hand, they are not simply transferring narrowly practical skills. A better description of the AMKs is to use the term "professional". Even more problematic in the attempt to distinguish between universities and the AMKs is that whilst universities may focus on "scientific" or "academic" education, they, too are also preparing graduates for working life – though for different kinds of work drawing on some different kinds of knowledge and skills. By far the majority of PhDs, for example, enter employment outside the academy. Important fields within the universities are clearly professional, like medicine, law, dentistry, etc. In Finland, by contrast with many other countries, both teacher training and pre-school teacher training are also the responsibility of the universities. University research, too, is not only "basic" research; in fields like technology and medicine, most is of an applied kind, carried out in close collaboration with companies, often as contract research. In all countries there is a strong trend for contract research to become more visible and important in the universities.

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Equally, a focus on "working life" in polytechnics must not exclude consideration of wider purposes and functions of higher education, including the development of personal capacities for learning and for contribution to both personal life and civil society. As we noted earlier, higher education should not be merely instrumental. And whilst we support the development of higher education for working life, we note, too, the need for higher education (in universities) which is not directly driven by the needs of the labour market, and which seeks to develop a subject or knowledge for "its own sake" – both because this is the mark of a civilised society, and because of its potential, but unpredictable, value. There is, thus, a need for considerable diversity in higher education provision.

One of the key issues that all societies face is how to maintain this necessary diversity of provision in higher education. The variety of structures and higher education policies in different countries attests to the difficulty of finding a solution. Many countries, as with Finland, have chosen to create and sustain a "binary" or "dual" system. As OECD (1991) pointed out, they have done so for a variety of reasons – economic and social as well as educational – but an underlying purpose of such systems is to prevent the domination of higher education by only one set of – usually traditional university – values. Even so, a substantial literature has recorded the tendency to "academic drift" (OECD, 1991) – of non-university institutions to aspire to the characteristics of the universities. Concerns to this effect have featured in the policy debate and in the evidence we received in Finland about the development of the polytechnics. There is equally, though more recently, a concern about "vocational" drift of the universities, who acquire, often in response to the success of non-university institutions, characteristics of the alternative sector (*ibid.*). A number of our respondents expressed concerns about developments of this kind in Finland. These tendencies, if left unchecked, lead to a blurring of the boundaries between institutions, and more significantly, to a diminution in the diversity of provision that is necessary in a complex and rapidly changing world. For this reason we support the maintenance of a dual system in Finnish higher education.

The purpose of diversity of provision is to offer choice to individuals. The underlying principle of the future organisation of higher education in Finland should be, we believe, to offer maximum individual mobility, but minimum institutional mobility. By institutional mobility we mean institutions' freedom to change their mission, and hence undermine the diversity of the system. Choice for individuals is only possible if there are differences between institutions and the programmes that they offer. Evidence from across the world suggests that, despite the artificiality of a division into (only) two sectors, a dual system is more likely to achieve this than a unitary system. The more choice students should have the more the functions and structures of

the two sectors have to be clarified and legally fixed. The greater the similarities between the sectors, the less the choice for students. It thus becomes a responsibility of the government to ensure, through legislation and other instruments of policy, that the distinction between the sectors does not become blurred.

Thus, we support the continuation and strengthening of a distinctive, polytechnic, sector of higher education in Finland. We have already noted some distinctive educational features of the polytechnic sector in Chapter 10: we confirm that the following "dimensions of diversity" should characterise the future educational development of the sector:

- professional orientation;
- distinctive inputs in terms of:
  - students (diverse abilities, including adults, and for postgraduate programmes with a minimum three-year experience of working life);
  - staff (with experience of working life, and practitioners and professionals who teach part time);
  - programmes rooted in the needs of the workplace, with appropriate curricula and pedagogy;
  - methods of ownership, control and funding;
- distinctive outputs:
  - graduates equipped for employment and for future study;
  - regionally relevant R&D;
- international commitment.

We would emphasise: the purpose of sustaining the development of this sector is to offer diversity of provision. This can best be done, we believe, by allowing the new institutions to develop in stable conditions. It is important for both the AMK sector as a whole, and the individual institutions – some of them in existence only for a few years – to define their own identity, to establish their own criteria, and to avoid domination by a unitary set of (narrowly academic) values. Legislation and decrees have a part to play in this, as we note in Chapter 12, by distinguishing clearly between the functions of the polytechnics and the universities. But there is a wider range of responsibilities, for the institutions themselves, their owners, the Ministry and others to ensure that the sectors develop distinctive educational profiles.

11.3. The number of polytechnics

Polytechnic policy has resulted in a considerable reduction in the number of institutions consolidating provision into fewer than thirty polytechnics from over 200 precursor colleges. There is nonetheless discussion within

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Finland about the number and distribution of polytechnics, as well as of the universities. The review team did not detect any consensus on this issue. There were some who argued that there are "too many" polytechnics, pointing particularly to the density of polytechnic provision in the Helsinki area. As we note in Chapter 10 and Chapter 12, there are also some operational problems with multi-site provision. These arguments are used to support a suggestion of further consolidation of polytechnic provision. On the other hand, there is a strong argument for the regional distribution of polytechnic provision. These are not easy dilemmas to resolve. Solving one problem – for example, by centralising or consolidating provision – can add to another by, for example, reducing access for local people. The review team was not required or able to examine the detailed logistics of polytechnic location, but it would accept that there is a case for consideration of the number and distribution of the institutions. However, it should be borne in mind that any such changes disrupt institutions and their staff and students, and are costly in money, human resources and time. Organisational changes of this sort should only be undertaken if the benefits clearly outweigh both the disadvantages of the present arrangements and costs of the change.

Allied to the arguments about numbers of polytechnics is concern about the relationship between proximate polytechnics and universities which have provision in similar subject areas – for example business and technology. Similar questions also arise in areas where there are several polytechnics with similar subject area provision. The review team was encouraged by examples of co-operation between neighbouring polytechnics and between polytechnics and universities and would encourage further developments along these lines. If institutions can agree an appropriate distribution of provision and specialisation themselves, this would help obviate the need for more traumatic reorganisation. We note in Chapter 13 a model from New Zealand of a formal institutional agreement on the demarcation of provision to be offered at two adjacent institutions. These issues do point, however, to the need for further thought about the overall "map" of higher education provision in Finland, in respect of both the relationship between the AMK sector and the universities, and of the role of higher education in the knowledge economy and the learning society.

11.4. Summary and recommendations

- Much of the discussion and controversy in Finland about the Government's intentions about the scale of the higher education system is misconceived. The Government should clarify what its quantitative targets are and what they mean.

- Evidence from Finland's recent history supports an ambitious policy of investment in higher education.
- It is evident that Finland has already achieved a very high level of participation and that whilst the targets for 2004 represent an increase on present numbers, the change is incremental, not fundamental.
- Evidence of the changing nature of the labour market and the economy, as well as of the changing age structure of the workforce, points to a continuing future need for high levels of highly qualified people.
- We see no need for the Government to deviate from its current targets for overall student numbers in higher education, nor for those in the polytechnic sector.
- We support the maintenance of a dual system in Finnish higher education. There is a substantial consensus in Finland for provision of higher education, different from that traditionally provided by universities, and directed towards the needs of working life. There is, thus, a need for considerable diversity in higher education provision. Higher education should not be merely instrumental.
- The underlying principle of the future organisation of higher education in Finland should be to offer maximum individual mobility, but minimum institutional mobility.
- The review team did not detect any consensus on the issue of the number and distribution of polytechnics but accepts that there is a case for consideration of the issue. This points to a need for further thought about the overall "map" of higher education provision in Finland. Substantial changes should only be undertaken if the benefits clearly outweigh both the disadvantages of the present arrangements and costs of the change.
- The review team was encouraged by examples of co-operation between neighbouring polytechnics and between polytechnics and universities and would encourage further developments along these lines.

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PART II

Chapter 12

Key Elements of Policy for the Polytechnic Sector

Abstract. *Chapter 12 discusses the key elements of policy concern in the Ammattikorkeakouluts (AMKs). It examines governance and ownership, steering and funding, the relationship with working life, internationalisation, and staffing. It recommends where changes are needed and suggests what legislation and other instruments might be used to achieve them.*

The distinctiveness of the polytechnic sector, which we have supported in the previous chapter and which we believe should continue to characterise the sector, is sustained and can be enhanced by a number of key elements of policy. We turn to these in this chapter.

12.1. Governance and ownership in the polytechnic sector

In many higher education systems, institutional governance structures have been changed over the past decade. The changes reflect social, economic and political pressures on higher education institutions to become more responsive to the needs of society, to become more entrepreneurial, and to become more efficiently and effectively run. They imply a move away from the traditional collegial way of running an academic institution towards a more managerial model.

Core elements in the adaptation of institutional governance are: strengthening central institutional administration, complementing or even replacing democratic councils and senates by external boards representing external stakeholders' interests, introducing "business-like" management and procedures and weakening the position of academic staff and students in institutional governance. Universities especially have been affected by the pressure to adapt. Polytechnics and other types of non-universities were traditionally more externally oriented and centrally administrated than universities.

These changes in the nature of institutional governance structures can be observed in Finland. As indicated in the 1994 OECD review report (OECD, 1995), Finnish universities have been obliged to adapt their governance structures in accordance with the above-mentioned principles and expectations. Similarly, institutional governance of the new polytechnic sector was based on the starting-point that external stakeholders should play a major role in institutional administration.

However, it can be argued that in many cases the polytechnic system has not created effective, entrepreneurial management and governance structures. Their governance structures reflect the strong emphasis in the reform on the regional and development dimension of the polytechnic sector, aimed at addressing the interests of regional stakeholders rather than linking these interests to the needs and interests of the institution itself.

12.1.1. *Institutional ownership*

In the polytechnic reform, the Finnish government took the deliberate decision that none of the polytechnics would be state-owned. Instead a multiple ownership structure was introduced, with polytechnics either privately owned or owned by one or more municipalities, reflecting, in part, their origins as vocational institutes. Seven polytechnics are owned by individual municipalities, eleven by joint municipal boards, eight by limited companies, and three by foundations. This multiple ownership structure was regarded to be the best way to do justice to the intended regional foundation and orientation of polytechnics. Whilst this diversity of forms of ownership is a strength of the sector, it presents some problems.

The nature of polytechnic ownership reflects the tensions and presents something of a challenge of relationship, accountability, and adjustment between the three main actors involved in governance of the sector. The Ministry of Education is legally responsible for the sector and is the main funding agency; the maintaining administrative structure represents the owners of the polytechnic; and the internal, "autonomous" administration of the polytechnic represents the academic community. An important element of the challenge is the need to separate the legal and administrative responsibilities of the state and the owners from the academic development responsibilities of the polytechnic itself.

The legislative situation with respect to polytechnic governance appears to be complicated, because the Act on Polytechnic Studies deals only in general terms with the administration of polytechnics, and other relevant laws (*e.g.* the Municipal Act, company law) are not designed to regulate the administration and ownership of polytechnics. Although we have been advised that there is no direct contradiction between the various Acts, the Government may wish to clarify, in any new legislation, the primacy of the Act on Polytechnic Studies in this respect.

Partly because of the complexity of the legislative position, the application of the legislative framework for polytechnic administration and governance is to a large extent locally determined, leading to variations between polytechnics with respect to their administration. In some institutions this has led to administrative structures that function to the satisfaction of all involved, while in other institutions the administrative functions are reported to be inefficient. In the latter cases, for example, the budget procedures reflect the lack of adjustment between ministerial requirements and procedures, and the requirements and procedures of the municipality (as we note also below). In addition, whilst the ownership of the polytechnics by municipalities (singly, jointly or through a limited company) or foundations offers a base for local or regional support, as we note below, this varies considerably. Although all the

owners are proud of their polytechnic, not all choose to – or are able to – support them to the same extent.

In a number of cases the nature of the ownership body is an indication of its lack of effectiveness. Instead of being a relatively small body consisting of people who can link regional interests to institutional needs efficiently and effectively, some boards consist of many members representing municipal and other external interests. Many members are selected on the basis of their municipal involvement and not on the basis of knowledge of the polytechnic sector. As a consequence some members give priority to the interests they represent, rather than the interests of the polytechnic. Although in general the rector of the polytechnic is the chair of the polytechnic board, in at least one case the polytechnic board is chaired by the representative of the maintaining foundation.

12.1.2. *Institutional autonomy*

The current Act on Polytechnic Studies (Section 9) provides for a high level of autonomy in administrative and academic affairs for the institution itself. This starting-point is important and has to be supported in general. However, it is the impression of the review team that the general provisions in the current Act do not necessarily lead to an institutional administration that always functions satisfactorily for all involved. Instead there seems to be a certain amount of arbitrariness in matters such as representation in the polytechnics' administrative organs and governance bodies, and too much diversity in the way the maintaining body interprets its tasks. Some bodies clearly are focused on furthering the needs of "their polytechnic", while others seem to function more as a political body representing the interests of the owners involved. Some of the polytechnics owned by municipalities seem to be caught between the interests of the owning municipalities on the one hand, and the internal institutional needs and interests on the other. While institutional autonomy in academic matters generally works well in practice, the way the administration of the institutions is regulated can be improved in a number of respects. We recommend that the Government review the operation of polytechnic governance.

One way of resolving these difficulties is to reconsider the division of tasks between the body maintaining a polytechnic and the administration of the polytechnic itself. The recent developments in Sweden of a "two body" system offer one such model for consideration. At the very least the participation of the owners in the negotiations with the Ministry on academic objectives and results should be reconsidered. In addition, it would be more efficient if the administration of the polytechnic itself had the authority to decide on all internal administrative and academic issues mentioned in the background report. An external board composed by the owners, and functioning as a kind

of Board of Trustees, would be responsible for approving the economic plan and the budget of the institution, approving main financial, personnel and other decisions taken by the polytechnic, appointing the rector, and representing the interests of the owners and other actors from the regional community in which the polytechnic is located. It may be that the model of a not-for-profit limited company is the most appropriate way of achieving this, even for polytechnics owned by a single municipality. Municipalities could represent their interests through membership in the board of the company. An internal board would be responsible for all academic decisions and for all internal administration. This Board would be chaired by the Rector; chairing by a representative of the owners is an infringement of academic autonomy. In the event of an irresolvable dispute between the polytechnic and the owner, the Ministry of Education should have the final word.

12.1.3. *Student and staff representation*

An initial impression of the review team was that the lack of regulations requiring the formal representation of students and staff in institutional decision-making bodies was a major problem (see also Chapter 4 of the background report). The national polytechnic student union (SAMOK), for example, indicated that student representation is the main issue on their agenda. However, it became clear during institutional visits that, in practice, students, as well as staff, are represented in the institutional administrative structures of most polytechnics, and even in the institutions where they are not formally represented, both groups have found effective ways of having their voices heard, for example, through attendance at institutional committees. Nonetheless, there are no convincing arguments why the legal situation with respect to student and staff representation should differ between universities and polytechnics. All university students are obliged to become a member of a student union, while this is not the case for the polytechnic students, and unlike the Act on Polytechnic Studies, the University Act does prescribe the representation of students (and staff) in institutional administrative structures.

12.1.4. *Single- versus multi-campus institutions*

The current polytechnic legislation does not include direct provision about the location of a polytechnic. The location of polytechnics is to some extent a reflection of their history, as well as of a concern to achieve a wide geographical distribution of polytechnic provision. Some polytechnics have a single location, while others are spread over numerous towns and campuses. The latter is largely a consequence of the location of the former upper secondary vocational schools that were merged into the polytechnic. The municipalities where these schools were located do not want to lose their part of the new polytechnic provision and resist centralisation. The multi-campus model has also been supported as a mean to decentralised delivery.

The choice of a single- or multi-campus structure has potential consequences for the organisation of the institution's administration. While administration is relatively straightforward on a single campus institution, the review team has encountered a number of organisational variations on multi-campus institutions. The main question with respect to the latter concerns the level of autonomy of the individual campuses. The more administrative autonomy the individual campuses have, the less "grip" the central institutional administration will have on its institution. Whilst these are matters for the internal management of each polytechnic, we recommend that the centralisation of institutional administration should be reviewed.

12.1.5. *Reforming polytechnic governance*

We have already noted the need for clarification of the legal framework for polytechnic governance and for a review of polytechnic governance. The current Act on Polytechnic Studies states that provisions concerning the administration of a polytechnic will be issued by decree, and it is recommended that this power be invoked after the review of governance to improve the effectiveness and efficiency of the administrative structures of the polytechnics. Any new legislation should provide for a similar power. Particular attention should be given to budgeting procedures, personnel policies, representation on the polytechnics' administrative bodies, and reporting procedures. These should be clear, transparent and as similar as possible for all polytechnics.

12.1.6. *Summary and recommendations*

- Whilst the diversity of forms of polytechnic ownership is a strength of the sector, it presents some problems.
- The Government may wish to clarify in any new legislation the primacy of the Act of Polytechnic Studies in respect of governance of the polytechnics.
- The Government should review the operation of polytechnic governance.
- The issue of ownership of polytechnics should be separated from the responsibility for administrative and academic matters in the polytechnics. Separate boards should be responsible for each function. The polytechnic itself would have the authority to decide on all main internal administrative and academic issues.
- Consideration could be given to limiting the ownership options to a foundation or a limited company. Municipalities could represent their interests in either of them through membership in the board of the foundation or company.
- There should be no differences between the legal requirements and rights of the students of the universities and the students of the polytechnics in governance matters. The same goes for the legal requirements and rights of the staff of the two sectors.

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- The administration of multi-campus institutions should be reviewed.
- After its review of polytechnic governance, the Government should use its existing power to issue decrees on governance to improve the effectiveness and efficiency of the administrative structures of the polytechnics. Any new legislation should provide for a similar power.

12.2. Steering and funding of the polytechnic sector

12.2.1. *Steering of higher education*

The steering mechanisms for the new AMK sector in Finland were established at a time of substantial change in the relationship between the central Finnish state and institutions of higher education. Consequently, in the steering of the polytechnics, elements of the old and the new approaches can be detected. As OECD (1995) reported, detailed central regulation of the universities had been reduced in the early 1990s and institutions were given considerable autonomy in the management of the funds allocated to them. The management and steering of the polytechnic sector, however, had to start from the responsibility of the Government to prevent it from developing in an undesirable way. Consequently, although the polytechnics were ostensibly autonomous, there was more detailed control in this sector than for the universities. The Government felt it necessary to control the development and growth of the polytechnic sector in two ways: first, by determining in which fields of study an institution is allowed to offer teaching programmes; second by determining, after negotiation, the number of places funded per field of study in each institution. The Ministry of Education has seen the steering mechanisms by field of study as very effective. It has been an important tool when nation-wide needs have emerged rapidly, for example in the health care and information technology sectors. The Ministry view is that it has made it possible to redirect education in a more effective and rapid way than if the decisions were made solely by each institution.

There is validity in this argument, but while governmental steering was understandable during the period of polytechnic development, after ten years the focus of steering should be reconsidered. The chance of development "surprises" in the near future, for example of rapid, unexpected growth in student numbers in one or more fields of study, is as low in the polytechnic sector as in the university sector. There is, equally, the difficulty of central determination of future labour market needs. We think a less detailed and more "holistic" approach to steering and funding of the AMK sector should be adopted.

12.2.2. *The Finnish tradition*

When reviewing the steering relationship between the government and higher education in Finland it is important to take into account the Finnish

"horizontal steering tradition". This tradition can also be observed in the other Nordic countries. Social, political and economic relations in Finland tend to take place through horizontal networks; Finnish society is cautious of exclusive reliance on hierarchical or market-driven steering relationships, and though elements of both may be used, there is a realistic understanding of their limitations. Consequently, adaptations of steering mechanisms for higher education cannot simply involve a strengthening of the Government's position, or the introduction of a market mechanism. Instead, the tradition implies a reshuffling of the roles and positions of the main actors and bodies involved in the networks.

The current Finnish steering strategy with respect to higher education can be characterised as a corporate-pluralist approach (Olsen, 1988; see also Gornitzka and Maassen, 2000). In this approach, the state is not a unitary actor with monopoly of power and control in higher education. Rather, there are several competing and legitimate centres of authority and control. The steering mechanism reflects the constellation of interests voiced by different organised groups, such as student unions, staff unions, professional associations, industry, and regional authorities. A Ministry of Education is just one of the many stakeholders with a claim on the role and direction of higher education. The main arena of policy-making consists of a corporate network of public boards, councils and committees. Direct parliamentary power is rather limited – policy-making goes on in conference rooms and closed halls outside Parliament. Societal participation takes place through organised interest groups. The dominant mode of decision-making is one of negotiation and consultation, with extensive "sounding out" of views and opinions. There is little explicit and deliberate or top-down co-ordination across policy sub-systems. Rather government control is dependent upon power relationships and structured negotiations, instead of market forces or hierarchical decisions. Changes in higher education are influenced by changes in power, interests and alliances.

This approach reflects the variety of functions that Finnish higher education serves. Whilst it is recognised that the institutions have a significant function in economic growth, the idea of a market-driven system, solely responsive to learner or employer preferences is not accepted. Higher education has a range of functions, not least as a public service, represented by other interest groups – including the government itself – and a market system would not serve these purposes. In recognising this diversity of purpose, there is an appreciation of the limitations of both strong government steering and of allowing relatively unfettered access to higher education. As an official of one ministry, reflecting on this dilemma, put it: "we can't give a full answer."

It was in this context that the steering mechanisms for higher education of the 1990s were established. Until this time, the detailed rules and regulations of the old university steering system provided the framework for an approach

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dominated by the government, yet with a clear input from representatives of the university system. Steering focused on the inputs to the institutions – for example funding for student places. In the 1990s, the new approach for the universities focused on institutional output (or performance). This shift was accompanied by loosening of governmental regulation of "inputs", including funding and personnel policies. For the polytechnics, the government maintained control over funding inputs, but not over the detail of personnel policy. In introducing this shift Finland was in good company. Other European governments were moving from input driven to output oriented steering.

Such a shift does not necessarily mean that institutional autonomy is increased. The autonomy of universities and polytechnics is negotiated and the result of a distribution of interests and power. Although the government is deregulating, it focuses instead on the performance of the institutions. As a consequence, interaction and negotiation become important. Furthermore, in these negotiations and other interactions, the institutions are mainly represented by administrators and not by academics. Since the institutional position is determined by the outcomes of the negotiations, the new approach implies a growth in power – and consequently of autonomy – of the institutional administration, and a decrease in power – and autonomy – of the academic staff. The latter is reinforced by the increasing focus of the negotiations on performance at the institutional level. Academics have to account for their professional activities, both internally and externally, through amongst other things the evaluation procedures that have been introduced into the higher education system.

12.2.3. *Funding the polytechnic sector*

The nature and detail of the funding mechanisms for the polytechnic sector were amongst the most criticised aspects of the policy that the review team encountered during its visit. Institutions chafed at the detailed level of control; they reported complications and inefficiency in the annual planning cycle. They criticised the absence of both policy and central funding for capital investment (evidenced also by the virtual absence of this topic from the background report). The funding of the polytechnics was the subject of a Committee report, published after the OECD review visit, and which is broadly in line with our recommendations.

12.2.4. *Core funding*

Determining the amount of core funding of polytechnics takes place through a complicated mechanism. Currently all polytechnics negotiate annually with the Ministry about their core funding. While the agreements on targets and performance between the Ministry and the institutions cover many aspects (see Chapter 4), in practice the most important is the number of study places which account for nearly two thirds of total funding and

thus largely determines the level of public funding. The current negotiation process, described in the background report, is lengthy, detailed and inefficient.

Core funding is allocated on the basis of the agreed number of student places per field of study per polytechnic. We found few supporters of a funding system with this level of detailed control. Institutions reported a number of difficulties. First, is the length of time that the negotiation takes. Negotiations about student numbers begin more than a year ahead of the date that they will enrol. Thus, even though student enrolment generally follows the agreed number, there were reported problems with recruiting to these targets, leading to situations where institutions have either more or fewer students than agreed in particular subject areas. The Ministry, in practice, has been tolerant of these variations, but this itself raises questions about the value of the system, since it undermines the nature of the targets and performance agreement instrument. However, if the Ministry funds the target only, it undermines the autonomy of the institutions.

Institutions reported further problems with the calculations for "non-active" students (those who take a year out of their studies). There were complaints also about the difficulty of "rolling over" funds from one financial year to the next.

There are also problems associated with the way in which the unit prices for students are calculated. This is done bi-annually, based on the actual education-related expenses of the institutions. All funds that the institutions have used for education activities – in addition to the core funding – are included in the calculations. This offers no incentive for efficiency, indeed, the reverse. There is no incentive for institutions to minimise costs, for they benefit from increasing the reported costs, since these increases will be reflected in the next bi-annual calculation. It is in the institutions' interest to show a high level of expenditure to maintain the unit price.

Some of the problems noted above are "start-up" problems, reflecting the relative youth of the sector and its institutions, and are being resolved, so it is important not to over-react to them. Nevertheless they indicate some of the drawbacks and institutional costs of detailed central control, as well as, paradoxically, a lack of steering in other respects.

We see no real benefit to the level of control now exercised by the Ministry. The length and detail of the funding mechanism militate against institutional autonomy and the ability to respond to student preference. The priority attached in Finland to internationalisation of higher education heightens the need to enable institutions to respond to demand. Thus, we recommend that the sector can be funded on the basis of agreed target student numbers for each institution as a whole, instead of per field of study

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by institution. It would be prudent in such a system still to permit a modest variation (a few percentages) from the overall student number targets if individual polytechnics encounter unexpected difficulties with recruitment or if there is an unanticipated local or regional need that it is agreed they should respond to.

Furthermore, we recommend that funding be agreed for a three-year rolling period, rather than on an annual basis. The institution's strategic plan would be the basis for this three-year agreement. This "holistic" approach to funding also implies that the separate funding streams for adult education students and "mainstream" polytechnic students should be combined in the total allocation.

In any case, since the Ministry and the institutions have now reached three-year agreements for 2001 onwards, it should not be necessary to have the current detailed annual negotiations. However, these agreements are based on the distribution of funded student places per polytechnic for each cohort entering in the following year. Although funding for this cohort is guaranteed for three years, the funding for the next cohort has to be agreed upon through negotiations in the next year. Whilst it may be desirable to permit some modest element of negotiation and flexibility each year (to respond to unexpected developments), "real" three-year agreements would, by contrast, imply agreement on the targets and performance for a full three-year period, including the funding and educational provision for these three years.

Funding of student places does not necessarily cover all of the core activities of polytechnics, particularly the polytechnics' regional roles, which are implemented in a variety of ways additional to the teaching of students. We note below the need for additional core funding to develop this role.

In the longer term, one way out of the dilemma noted above about ministerial control and institutional autonomy would be to consider a shift of funding focus from student places (input) more towards student graduation (output). The funding arrangements used for the universities could be an example for the adaptation of (perhaps part of) the polytechnics funding model. In any such consideration, due attention would need to be paid to possible deleterious consequences. One such is the incentive to relax entry qualifications. The current university output based funding system offers universities a potential incentive to relax the entrance conditions for polytechnic graduates, since it can be assumed that the more polytechnic students the universities accept the more of them will graduate. In addition the more credits the universities accept of the polytechnic graduates upon enrolment (though in practice they have not so far been generous), the faster they can graduate. Similar considerations would apply if such a system was

introduced in the polytechnics, mainly in relation to the credits awarded for prior learning through AP(E)L schemes. This raises the issue we discuss in Chapter 13 of the need for more systematic and predictable arrangements for credit transfer, with adequate provision for quality assurance. However, there are other funding models that could be considered, *e.g.* the Danish so-called "taximeter" funding principle in which institutions are funded for each student who successfully completes one year of study. Institutions receive an initial payment and the balance on successful completion. The rates are fixed according to each subject area, and institutions have an incentive to increase efficiency by driving down costs and increasing the attractiveness of their courses.

12.2.5. *Incentive funding*

There are other elements of the funding of polytechnics which have separate mechanisms, for example, project funding to promote particular aspects of policy, performance based funding, and capital funding. Earmarked "project funding" has been used to support the polytechnic reform. Examples of projects are continuing education for teachers, internationalisation, digital learning environments, and library and information services. As is indicated in the background report, this type of funding will become more focused on financing R&D, new development projects and individual projects.

Part of the funds for polytechnics are currently allocated on a performance basis, according to general criteria such as efficiency and cost-effectiveness, international activities, and equal opportunity. The evaluations of the Finnish Higher Education Evaluation Council (FINHEEC) are playing a part in the distribution of this performance-based funding, especially with respect to centres of excellence in teaching, and centres of excellence in regional impact.

Whilst we support the retention by the Ministry of some powers to allocate project funding to support developments thought desirable by the Ministry and an element of performance based funding, we do not see why these are dealt with on an entirely separate basis from core funding. They are, or ought to be, elements of each institution's overall development plan.

In line with our proposal that future funding should be based on the strategic plan of the institution, we recommend that earmarked funds for specific activities should be included in the negotiations about general funding of polytechnics. In each funding cycle the government could come to an agreement with the institutions corporately and with other important stakeholders on the specific policy issues to be addressed through earmarked funding. Earmarked funds made available for addressing these policy issues could then be distributed on the basis of competition between institutions and included in their three-year funding allocations.

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We recommend that here, too, from an efficiency and transparency point-of-view it is preferable to integrate at least the individual performance-based funds into the regular funding mechanism. This recommendation is in line with that from the Committee on polytechnic funding. Since governmental steering is shifting from input to output, the performance of polytechnics will become an important element in new funding arrangements.

However, the distribution of the funds for centres of excellence should be kept out of the regular funding allocation. There should be a clear, public programme indicating the criteria for centres of excellence, and a monitoring programme for following the extent to which they achieve the agreed outcomes.

Some central government funding is available for certain national projects, for example, Internet connections and information networks, and the polytechnic monitoring and evaluation database. While the provision of these funds is understandable in the light of the importance of the projects, it can be asked what is the most efficient way of investing these funds. We suggest that the government should either: integrate these funds into the regular budget for the polytechnics and distribute them on an earmarked basis to institutions who have responsibility for the projects; or invest the funds directly into the projects and set up structures outside the polytechnic sector to run them.

Our recommendations make the institutional strategic plan the basis of virtually all the funding for each institution. After all, if it is not, it is hard to see the point of producing it. It would be the starting-point for the negotiations on core funding, taking into account information on the expected student demand for study places, labour market development, policy targets concerning international students, the polytechnic's regional role, etc. Through the negotiations on strategic plans, the Ministry would still be able to ensure rapid response to nation-wide needs in particular fields, because it would not support a plan that neglected these. The Plan would also be the basis for proposals for project funding. As we note below, it would, further, be the basis for funding general developments and particular projects requiring capital investment. After a certain period, new negotiations would start for the next three-year funding period. The negotiations would be based on evaluation of the AMK system as a whole, the performance of individual institutions, the state of the economy and the policy goals of the Finnish government.

12.2.6. *Sources of polytechnic funding*

Finland is a strongly decentralised society. Local authorities have the main responsibility for public services, including education and training. This includes the funding of public services, of which at least part has to come directly from local taxes. This also applies to the polytechnics, but not to the

universities who are the main exception to this rule. They are state-owned and state-run, and local authorities do not contribute to their funding.

Currently the bodies maintaining a polytechnic (municipalities, joint municipal boards, limited companies, or foundations) receive their entire core funding through the central government. The central government provides 57% of the core funding and the local authorities (corporately) the remaining 43%. Each municipality contributes to this 43% share, based on the number of its residents, not on how much polytechnic education it provides, or how many of its residents are enrolled in polytechnics. The state element comes through the Ministry of Education, and it was put to us by the association for local authorities that this implies that polytechnics are funded only for their educational task, not for their contribution to economic development. However, polytechnics do have links with and access to a range of funds from other ministries (Labour, Interior, Trade and Industry and Agriculture and Forestry) and agencies (such as the EU), depending on their situation and specialisation. Co-operating with this bewildering array presents difficulties for municipalities and owners; an official of one ministry described the situation as a "regional mess"; we comment further on the issue in Chapter 13.

The state budget records the government's 57% share as a net sum. However, the local authorities' contribution is also allocated to the polytechnic owners through the central government. But if the owner is a single municipality, its own share (based on its number of residents) is subtracted from the total amount to be received from the government. Polytechnics owned by joint municipal boards receive the total amount of core funding (including the contribution from the local authorities) from the government. The same goes for polytechnics owned by foundations and limited companies. Polytechnics currently secure additional income from other sources, for services such as tailor-made short courses for industry, EU projects, etc. We noted earlier the scope for further development of these sources of external income and we return to the issue in Chapter 13.

12.2.7. *Capital finance*

Regardless of their ownership, all polytechnics visited by the review team mentioned the problem of the lack of central funds for capital investment. In part this reflects the formal responsibility of the owners for the provision of the institutions, but it largely arises currently because, although there is provision for government capital funding for the polytechnics, financial stringency has precluded it. The polytechnics differ from the universities in this regard, since all the universities have rented premises and they get resources for the rent costs in their core funding. In practice, this lack of central funding leads to differences between the polytechnics. Some institutions have access to investment capital through the municipality in

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which they are located. The conditions for getting capital for investments for these institutions are generally favourable, but of their nature depend on the circumstances and attitude of the municipality. Capital investment in polytechnics owned by foundations or limited companies similarly depends on the wealth and commitment of the owners. Even in the cases where institutions do have access to capital funds, there is no guarantee that this situation will continue in future. It was reported to us that initially the owners of polytechnics were keen to build up their new institutions, but that the enthusiasm has now waned. Some capital investment may now, in practice, be funded out of the per capita allocations for recurrent funding. There are other disparities. Some institutions are located in regions for which either national or EU development funds are available. These institutions have been able to use these development funds for investment purposes.

We recommend, therefore, that in the future polytechnic funding system each institution will have access to capital for investment. Whilst capital funding would still remain the responsibility of the owners, it does seem reasonable for the central government to support the provision for investments that it has itself agreed with the institution in its strategic plan. The extent of such support should be the subject of negotiation, since capital investment, unlike recurrent spending, is intermittent and the government may wish to support institutions selectively, and to take account of the other sources of funds open to them. The funding provided, however, could be included in our "holistic" approach, as an element in the annual allocation, to cover loan charges for developments in the institution's strategic plan agreed in the framework of the three-year target and performance agreements between the institution and the Ministry. (The Committee on polytechnic funding also recommends that capital finance be a part of core funding.)

12.2.8. Summary and recommendations

- The current funding structure of the polytechnics reflects the establishment period of the sector. It is mainly input oriented, rather diversified and fragmented. In addition, it includes earmarked funds that are not distributed in the most efficient way, and the criteria on the basis of which they are distributed are not always transparent.
- We recommend that the sector be funded for agreed student numbers for the institutions as a whole, instead of per field of study for each institution.
- We recommend that funding be agreed for a three-year period, rather than on an annual basis. The institution's strategic plan would be the basis for this agreement.
- We recommend that funds to support the polytechnics' regional role should be included in core funding.

- In the longer term, consideration could be given to a shift of funding focus from student places (input) more towards student graduation (output).
- We recommend that earmarked funds for specific projects be included in the general funding arrangements.
- We recommend integrating performance-based funds into the regular funding mechanism.
- The distribution of the funds for centres of excellence should be kept out of the regular funding allocation. There should be a clear, public programme indicating the criteria for centres of excellence, and a monitoring programme for following the extent to which they achieve the agreed outcomes.
- Central government funding for certain national projects should either: be integrated into the regular budget for the polytechnics and distributed to institutions which themselves should have responsibility for the projects; or invested directly in structures outside the polytechnic sector.
- All polytechnics visited by the review team mentioned the problem of the lack of central capital investment funds. We recommend that, whilst capital funding would still remain the responsibility of the owners, each institution should have access to central government funds to support investment. The extent of such support should be the subject of negotiation, but the funding could be included as an element in the annual allocation, to cover loan charges for developments agreed in the institution's strategic plan.

12.3. Relationships with working life

Two central tenets of the AMK mission are to ensure that graduates are prepared for working life and the institutions support the development of the regions within which they are located. A number of elements of polytechnic provision support these purposes, but in most institutions we visited they were collectively referred to in terms of the research and development (R&D) that is undertaken by both students and institutions. The distinctive approach that the institutions employ regarding this broad understanding of research and development is a key element in their links with working life. A major, and the most formal, part of the R&D work is in the students' final year and consists of a research project for a specific firm or organisation. Project-based learning is emphasised in the basic and specialised courses based on "real world" problems. We have noted in Chapter 10 some of the issues arising from these projects, but we can record here that the general thrust of the curricula and instructional methodologies revolves around the core and distinctive principle of the AMK – the education is derived from the needs of the workplace both current and future. R&D work in the polytechnics is undergoing a strong development phase. In 2000, expenditure on R&D work in the polytechnics was

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more than 31.5 million euros (this does not include students' final year projects); 73% of this was outside funding. Again, we have noted (in Chapter 10) the possibilities for further development of this work.

We saw evidence of polytechnics responding to the skill requirements identified by industry and using the materials of such organisations as the Employers Confederation of Service Industries. This organisation has assisted educators by surveying their members over time to track the changes in skill requirements. The Confederation has shown that the high-growth skill areas are negotiation skills, management and business administration, language skills, international leadership skills and safety training (Employers Confederation of Service Industries, 1999). Such information helps both the central government and individual polytechnics focus their work. Furthermore, there is evidence that staff at the polytechnics seek feedback from employers within their regions about the content of curricula. We learned from one polytechnic, for example, that, based on the results of surveys of employers, the institution is seeking to improve the analytical problem-solving skills of students.

Another indicator of the polytechnics' regional role is their recruitment of students and subsequent employment of graduates. Raivola *et al.* (2001, pp. 81-82) provide interesting data on these. They indicate that eight out of 16 polytechnics recruited more than 65% of students from their region and that 65% or more of graduates from 11 of the 16 polytechnics are employed in the same region as the polytechnic.

However, there were several indications derived from the team's interviews, from the emerging evaluations of individual polytechnics and from general literature that much remains to be done to solidify the AMKs' connections to working life (Ministry of Education, 2001; various publications of FINHEEC, *e.g.* 1999; Raivola *et al.*, 2001; Huttula and Hamalainen, 2001). These various sources highlighted a substantial challenge. Comparable and reliable sources of data are non-existent. A review of the core data included in monitoring and evaluation database AMKOTA reveals the problem. There are no requirements for submission of information related to the regional role or connections to working life. It is recognised that caution is required whenever the call for more data collection is made, because of cost, collection burden, and reliability. However, given the centrality of these two factors in defining the role of the AMK sector, it is essential that some common indicators be established and collected (Ministry of Education, 2001).

12.3.1. *The role of national stakeholders*

The topic of regional development and higher education was the subject of study of a Ministry of Education committee at the same time as this OECD review was being undertaken. The report of the committee (the Committee on Regional Development of Higher Education issued their report as this OECD

report was being drafted) emphasises the important role that higher education plays in regional development. It identifies, too, the role of the Ministry in creating favourable conditions, co-ordinating national policy and formulating its own regional strategy. But, as one key observer stated very directly "the Ministry of Education is not a real player as it relates to influencing regional policies of the government". This observation rings true to the review team; there was no evidence to the contrary. At the governmental level we detected no – or only weak – links between the Ministry of Education and other ministries, particularly the Interior Ministry which has the lead responsibility for regional policies for the government. For most education related responsibilities this lack of formal connections has logic, as the issues are not core to the tasks of the Ministry of Education. However, given the mission of AMKs to support regional growth, it is prudent for stronger ties to be established between Education and other ministries. The purpose of this recommendation is not to create ritualistic or rigid structures but to ensure the value of the AMKs is understood and utilised within the larger national efforts to promote regional growth. From their own point of view, the AMK institutions need assurance that they have an advocate within the government so they can assist in any appropriate regional initiatives.

A topic that merits attention across the country and clearly needs to be connected with the work of other ministries is the priority on the part of several ministries to encourage the expansion of entrepreneurs in the country (Tiainen, 1999; *Education and Training for Entrepreneurship*, 2000; Huttula and Hamalainen, 2001). Finland does not have a strong international reputation for promoting entrepreneurial development. This is evidenced by the problem in the Rovaniemi (Lapland) region where over 50% of current business owners plan to retire in less than a decade. The placement of graduates as entrepreneurs is currently only 2.2% (background report, Chapter 12). It is not a rate that is close to meeting the needs for replacement of current owners nor encouraging for the creation of new firms. Expanding general understanding on the part of all students of key business principles is one way to address what has been identified as a serious national challenge that requires an educated public to respond to. It may be prudent to consider at least some exposure to the concepts of entrepreneurial responsibilities in the basic curriculum of all polytechnics. We note that the report of the Committee on Regional Development of Higher Education recommends such a development. If the AMK curriculum is too "crowded" then other forms of multiple, systemic and structured ways for the AMKs to support entrepreneurial expansion throughout the country need to be found. Any action taken to increase entrepreneurial education as a distinctive feature of the polytechnics needs to be co-ordinated with other ministries.

Representatives of the employer community raised a concern about the need to find more effective ways to work with the polytechnics nationally. Currently the most formal mechanism rests with the several National Education Committees (NECs) that advise only the Ministry on the content of the programmes of study. These have not yet found solid footing about what is the most effective means of giving advice to the Ministry regarding polytechnics. No doubt as time passes this situation will improve. However, the review team did not find as solid support from the employer community as would be desired for the AMK institutions. (Part of the unease focuses on the debates about the balance of students between vocational education and polytechnics, and the proposed postgraduate degrees to be awarded by polytechnics as discussed below.) Beyond these policy differences there were also issues raised – and some that were not – that merit attention. For example, employer representatives at both national and institutional level voiced concern about the lack of connection to working life of staff. The issue of qualifications of staff is discussed below, but heavy reliance is placed on part-time teachers from the private sector to ensure the connection to working life. Yet the statistics show these part-time teachers represent only a small percentage of the total teaching force. As we note below, there may be a need to provide support to institutions and individual teachers to "go back" into the non-academic setting on a routine basis.

The current channels of communication between representatives of the polytechnics and the employers were not always highly valued within the employer community. Certainly the review team did not find the channels transparent. Time did not permit full exploration of the strengths and weaknesses of the relationships between the organised employer community as well as that between individual employers and institutions. One employer confirmed the general sense that often the relationship between the polytechnic and the individual firm is not well structured. In this case it was the firm that insisted upon establishing an arrangement that met its need (in this case to help assure ISO recognition for training of its workers) as well as that of the students. The sense was the firm pushed to increase the quality of the interaction – not all employers would do so – nor was there evidence that the representatives of the polytechnic brought to the table tools and strategies of the highest quality. Although other employers were more positive about the links with polytechnics and we found considerable evidence from institutions of employer involvement in course design, the dissatisfaction with the polytechnics among the employer community must be treated as a real concern, whatever the causes may be. It is in the interest of polytechnics to collectively address this dissatisfaction. The Parliamentary committee for education and culture noted that a key factor for their support of the polytechnics is the active support of the business community.

One way of addressing this concern could be for the national organisation of polytechnic rectors (ARENE) to build a set of strategic alliances with the employer organisations at the national level – based upon a partnership approach. Such alliances, less formal than a government-sponsored committee, can provide a good venue for a variety of mutual self-interest activities. These alliance mechanisms should be designed to reach into each region. There are several issues that could be addressed by these networks. For example, the applied R&D work of students is not well distributed at the current time. Working in concert with employer associations, it would be possible to find creative and cost effective ways of sharing the results of applied research with firms across the country. A library could be developed based on programmes of study and the different industries. Another strategy could be finding ways to strengthen entrepreneurship education, previously discussed. Other possibilities include jointly developing criteria to recognise best practice to improve the quality of work-based learning in topics such as designing student R&D projects and providing materials to help employers undertake their responsibilities effectively.

These suggestions are not without cost. The role of the Ministry of Education would be to provide resources, through its project funding mechanism, to support the technical work to develop the infrastructure at the national and regional levels, including technical assistance to firms and polytechnics alike. This is a way to support the natural networks of stakeholders, build mutual criteria about what is best practice – for the purpose of building stronger connections between the AMKs and working life.

12.3.2. *Regional networks*

There is growing evidence across all countries of economic benefits to any community that is the home of a higher education institution. It is a popular economic development tool of local communities to advocate such institutions in their communities. Indeed we had an underlying sense that the interest of elected officials who are members of the AMK governing boards is often centred on decisions about the location of the institutions. They want the benefits and prestige of having the facility in their community. However, there are limits to this strategy (*e.g.* cost, capability of supporting high quality staff, efficiency, need, etc.). As we noted in Chapter 11, some in Finland are concerned about the overall number of institutions of higher education (Raivola *et al.*, 2001). The review team is not in the position to judge the appropriateness of the exact number of institutions nor their geographical placement throughout the country. In Chapter 13 we encourage continued experimentation to find ways to combine with some of the higher education institutions that have the special charge to address the needs of working life. Additionally, we applaud the polytechnics that are working with other

vocational education institutions in their regions as yet another way to promote regional development. We note the suggestion of the Committee on Regional Development of Higher Education that small polytechnic units providing degree level education in any one field might be combined into larger multi-field units.

There is, however, more to developing a strong regional value-added presence of institutions of higher education than has yet been realised. As acknowledgement of the importance of the polytechnics as regional actors, the Ministry of Education appointed the first centres of excellence in regional development in 2000. In 2001, 1.7 million euros were allocated to the centres of excellence as a part of performance-based funding. The centres of excellence are an important contribution in this regard; yet not every polytechnic can be one, nor is the focus of the individual centres ever going to reflect the full range of regional issues that each polytechnic needs to address.

During the 1990s the government chose to promote regional strategies with a spontaneous development approach based upon each region's own strengths. Included in this movement was the development of regional councils in 1994. These councils have responsibility for supervision of the interests of the municipalities. A part of this shift has been aimed at eliminating the problems of sectorised and fragmented local state administration (Tiainen, 1999). However, the funding for these activities comes via the Ministry of the Interior, reflecting at regional level the awkward division of national ministerial responsibility noted above. Similarly, at regional level, the polytechnics are not included in the responsibilities of the state office. For polytechnics to be effective in regional development they need to have a good understanding about what roles they should play within this spontaneous development approach, and which networks they need to be involved in or take the lead in. The review team sensed that this was not always clear within the institutions. The less bureaucratic approach to development reinforces the need to define some common indicators that can be used by all stakeholders to document the impact of the polytechnics, individually and collectively within any given region, and to promote state of the art approaches to higher education's contribution to regional development.

Defining boundaries of the region that each serves has been left to the discretion of individual AMKs and for some purposes, such as how and where they establish learning sites, this has practical merit. Also, the boundaries sometimes vary, allowing an institution to address different needs. Rigidity about geographic boundaries is not a major concern. However, in order to develop strong working relationships with other key actors within a region, some semblance of commonality of boundaries is important and these boundaries should be compatible with those used by other Ministries.

As already recommended, there would be substantial value in creating a network of employer associations and their various branches, through the aegis of the Rectors' national association and this form of networking could be used to strengthen ties across all of the polytechnics within a region.

12.3.3. *The institutional level*

Evaluations of individual AMK institutions have consistently identified as a common factor the need to improve their role within the region and specifically to improve relationships with the employer community (Ministry of Education, 2001; FINHEEC, 1999). The review team urges each institution to develop "real" strategic plans that include deliberate actions to continuously improve the relationships with employers and the region. Several observations from the evaluations to date note that all too often the polytechnic is driven by a regional goal of an EU project – not its own goals. The evaluations consistently noted, and it was reaffirmed in our interviews, that often polytechnics did not have a solid understanding of the needs of their external customers and potential partners (*e.g.* business assistance organisations, branches of industry, etc.). Thus a need exists for polytechnics to systematically (perhaps on a bi-annual basis) document the needs of the external partners within the region and develop a plan of action to respond to those needs. This is of critical importance given the country's approach to regional development. The results will vary by region but the need to undertake the process is constant. In all areas, but most specifically the urban areas such as Helsinki, this activity could be done jointly among the several polytechnics. Feedback mechanisms need to be established to monitor and evaluate the results of the strategic plan and work with the external partners.

Finally, we want to build upon an observation made by one individual teacher that, for him, it was a great personal risk to move from the ranks of teacher to managing a profit-making centre within the polytechnic with the responsibility of working with employers. The comment points to a substantial challenge for the AMK system. The current funding strategies do not appear to encourage the institutions to build the infrastructure to support employers or fulfil their mandate to support the development of the region as a whole. The current methods of financing institutions suggest few incentives or sanctions for an institution for improving either (although the recent Ministry of Education funding for centres of excellence in regional development in 2000 now makes some reward for institutions contributing to development of the region.). It is not surprising that both of these mission components have been identified as weak and needing strengthening.

12.3.4. *Summary and recommendations*

- The general thrust of the curricula and instructional methodologies revolves around the core and distinctive principle of the AMK – that

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education is derived from the needs of the workplace both current and future.

- However, there are indications that much remains to be done to solidify the AMKs' connections to working life.
- Comparable and reliable sources of data on the AMKS' connections with working life are non-existent; it is essential that some common indicators be established and collected.
- Stronger ties should be established between Education and other ministries, to ensure the value of the AMKs is understood and utilised within the larger national efforts to promote regional growth, and to ensure that the AMK institutions have an advocate within the government so they can assist in appropriate regional initiatives.
- The placement of graduates as entrepreneurs is at a rate well below that required to meet the needs for replacement of current owners and the creation of new firms. The polytechnics should consider at least some exposure to the concepts of entrepreneurial responsibilities in the basic curriculum of all polytechnics. Any action taken to increase entrepreneurial education in the polytechnics needs to be co-ordinated with other ministries.
- Heavy reliance is placed on part-time teachers from the private sector to ensure the polytechnics' connection to working life. There may be a need to provide support to institutions and individual teachers to "go back" into the non-academic setting on a routine basis (see also below).
- Current channels of communication between representatives of the polytechnics and the employer community were not always highly valued within the employer community. The national organisation of Polytechnic Rectors (ARENE) should build a set of strategic alliances with the employer organisations at the national level. The Ministry of Education should provide resources for the technical work to develop the infrastructure for co-operation at national, regional and institutional levels.
- Institutions' strategic plans should include deliberate actions to continuously improve the relationships with employers and the region. Polytechnics should systematically (perhaps on a bi-annual basis) document the needs of the external partners within the region and develop a plan of action to respond to those needs. This activity could be done jointly among the several polytechnics in a region or a city.
- Current funding strategies do not appear to enable AMK institutions to build the infrastructure to support employers or the development of the region as a whole. Nor do the current methods of financing the institutions suggest any rewards or sanctions for an institution for improving either.

12.4. Internationalisation, globalisation and international competitiveness of Finnish higher education

Finland's geopolitical position poses important challenges for its policies on higher education. The nearly simultaneous developments of Finland's entry into the European Union and the political changes in Central and Eastern Europe formed a watershed in this respect. From a former "neutral" – and in practice rather isolated – position, Finland has, since the early 1990s, become strongly oriented towards "the West". It has been especially eager to develop and profit from its membership in the EU. Finland has been a very visible and active EU member, and has tried to incorporate dimensions of this membership in its higher education policy.

Since the economic crisis of the early 1990s, long-term higher education policy has aimed at making Finland a country of knowledge and expertise, promoting education and research as part of a national strategy of survival. Quality and internationalisation are key words in this policy. This policy has been further developed and sharpened, in the development plan for education and research 1999-2004 (Ministry of Education, 2000b), and Finland's decision to embrace the Bologna Declaration.

12.4.1. *The goals of internationalisation*

Policy for the internationalisation of higher education institutions can be driven by a number of concerns – academic (for example to offer an understanding of practice elsewhere); a desire to prevent academic and institutional "inbreeding"; or economic (for instance, seeing higher education as an export industry). Elements of all three motives can be seen in current policy in Finland. The expressed rationale for the need of Finnish higher education to be more competitive includes:

- Preventing a brain drain from Finland of Finnish students and academics.
- Increasing the number of foreign students, in the hope that some of them will stay and seek employment in Finland after graduation.
- Further enhancing the international skills of Finnish students and researchers.
- Considering the possibility of offering Finnish higher education programmes outside the country.
- Helping Finnish higher education to compete with foreign providers offering programmes in Finland.

There is a particular requirement from globally-oriented industry for Finnish graduates who are comfortable doing business outside Finland and working with non-Finnish companies inside Finland. Less evident, but noted to be of growing importance by some of our respondents, is the concern to strengthen the "competitive position" of Finnish higher education for higher

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education services in world markets. This is necessary to ensure not only that Finnish higher education can continue to attract Finnish students, but that it can compete effectively for students from outside Finland. This notion of competition, and the need for Finland to adapt its (public) higher education system to be competitive, is a new element in Finnish higher education policy compared with the previous OECD review.

Improving the international comparability of vocational education was one of the key objectives of the AMK reforms of the 1990s, and Finnish policy has been and remains notable for its commitment to internationalisation in higher education. Because of this, the review team assumed that they would detect in AMK institutions (and elsewhere) some kind of overarching approach to the internationalisation of Finnish higher education, with deliberate and agreed strategies based on academic, social, political and economic assumptions, arguments and goals. However, it became clear that strategies for internationalisation at the institutional level have focused on a relatively narrow range of academic issues and student exchanges. The expectations of the OECD team that the AMK sector as a whole would be an important element in the Finnish government's export and internationalisation policy, in line with the arguments and aims of the background report, were not confirmed at the institutional level.

There is certainly a commitment to exchange students and to offer opportunities to foreign students to study in Finland. For example, a major policy target is that one in three students is expected to take part of his/her degree abroad. There is also concern by some that it is necessary in a small country with an "isolated" language, and a unique culture and history, to prevent "inbreeding" among academic staff. The issue of globalisation and the need to enhance the competitiveness of Finnish higher education are the concern of some on the government side (as expressed, for example, in the background report, Chapter 7). However, as far as we could tell, this competitive concern has not yet been fully "picked up" by institutional actors.

Part of the explanation of this may be that the roles of universities and polytechnics in internationalisation are not clear. Given the different missions of the two sectors, one would expect a clarification of the international role of each of them in policy. However, such a clarification has not been found by the team. In our interviews in institutions and elsewhere, a distinct view on internationalisation in polytechnics *versus* universities did not come to the surface.

12.4.2. *Progress on internationalisation*

Despite these criticisms, we should note that Finnish higher education, and the polytechnics in particular, have made considerable progress with internationalisation (see also Chapter 9, and Chapter 12 of the background

report). In practice, internationalisation occurs in a number of ways, for example: by recruitment of non-Finnish students to full degree programmes; by Finnish students studying abroad; by exchange of students for parts of degree programmes; by offering courses in languages other than Finnish; by Finnish staff going on exchanges abroad; and by non-Finnish staff on exchanges in Finland.

12.4.3. *Foreign students studying in Finland*

Box 12.1 shows the number of regular foreign students enrolled in Finnish higher education. The situation at the polytechnics and universities is rather similar; the number is growing, but it is still rather low, at less than 3% of the total enrolment. Investigation should be undertaken as to why polytechnics generally have fewer regular foreign degree students than the universities, and a support programme for polytechnics set up to increase the number.

Box 12.1. **Enrolment of foreign students in Finland**

In the polytechnics, the number of regular foreign students was 2 606 in 2000. This represents 2.8% if one takes only the number of young students as the base, and 2.3% if one takes all regular students (young plus adult) enrolled in polytechnics.

The number of foreign students regularly enrolled at the Finnish universities was 3 473 in 1999, representing around 2.3% of total university enrolments.

Source: Ministry of Education, AMKOTA.

12.4.4. *Student exchanges*

An important part of internationalisation is the number of students and staff (Finnish and foreign) involved in exchange programmes. The number of Finnish students going abroad in 2000 for longer than three months as part of an exchange programme is more or less the same for polytechnics and universities. However, the number of foreign students exchanging into Finland is significantly higher for the universities than for the polytechnics. Neither sector achieves at present the one in three target for student studying abroad (Box 12.2).

While there is broad agreement on the further internationalisation of Finnish higher education, the reasons behind this target and the underlying rationales were not always clear to the OECD team. It was not clear whether the policy goal that one in three of all Finnish students should take part of

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Box 12.2. **Student exchanges in Finland**

Polytechnics

Number of enrolled regular Finnish students studying abroad in 2000 as part of an exchange programme:

3 540 (average months abroad 4.6).

Number of foreign students at Finnish polytechnics as part of an exchange programme:

1 782 (for an average 4.3 months).

Universities

Number of enrolled regular Finnish students studying abroad in 2000 as part of an exchange programme:

3 962 (average 6.1 months).

Number of foreign students at Finnish universities as part of an exchange programme:

3 202 (average 6.5 months).

Source: AMKOTA.

their degree through study abroad implied that in all programmes about one third of all students should spend time abroad, or if this goal should be interpreted in a more diversified way, *i.e.* in some programmes (*e.g.* business and foreign language programmes) the number going abroad could be higher than one in three, while in others (*e.g.* Finnish language and nursing) it could be lower, as long as the average is one in three. A quantitative goal makes more sense if serious arguments are offered about the advantages and expectations for students in any specific field taking part of their degree study abroad. On the basis of such a consideration the target percentage of students going abroad could be decided. But if the argument is that foreign experience is in general advisable for every student, it makes no sense to restrict the opportunity to an arbitrary percentage such as one in three students. In that case, the *target* should be as many as possible – though *plans* or *expectations* may recognise that not all students may be willing or able to do so.

12.4.5. *English language programmes*

Few foreign students speak Finnish or are willing to learn Finnish. If it is an aim of the Finnish internationalisation policy to attract more foreign students it is essential to offer a wide range of programmes in English. It is admirable that the Finnish polytechnics have already managed to develop the

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range of English language programmes they offer at the moment. During the review, two issues emerged which might affect the further development of these programmes. First, many English language programmes are offered to small numbers of foreign (and sometimes Finnish) students, fragmenting the English language offerings of the polytechnics from the perspective of the sector as a whole. This is mainly due to the small number of foreign students enrolled for a degree in Finnish polytechnics. In addition to trying to attract more foreign students, consideration could also be given to stimulating co-operation between polytechnics in offering English language programmes. Instead of every polytechnic offering a number of small programmes, the English language programmes could be rationalised by introducing incentives for polytechnics to merge programmes and offer new programmes jointly.

The second issue is that the development and funding of new English programmes at present has to come out of the core funding system for polytechnic programmes. The Government could consider introducing earmarked funding for English programmes, related to the policy goals on internationalisation, that could, amongst other things, include the incentives for co-operation mentioned above, and incorporate their funding into the three-year cycle based on the institutions' strategic plans, as proposed above.

12.4.6. *Staff exchanges*

An interesting difference can be observed in the patterns of university and polytechnic staff spending time abroad in 2000 as part of an exchange programme (see Box 12.3). While in the universities there was hardly any difference between the number of staff spending a short time (less than one month) and a longer time abroad, polytechnic staff had a preference for short stays. There is a similar disparity in the numbers of foreign staff visiting Finnish institutions. At the universities, the number visiting for longer than a month is slightly larger than the number making a short visit (less than one month) but for the polytechnics the situation is the reverse.

That Finnish polytechnic staff seem to prefer shorter visits abroad compared to their university colleagues can be explained largely by the fact that polytechnic staff are hardly involved in research activities. Visits abroad for teaching purposes are in general limited in time.

12.4.7. *The polytechnics and internationalisation*

Given that they are a relatively new sector, the polytechnics have been remarkably successful in establishing themselves internationally. In 2000, their percentage of regular foreign students was as large as that of the universities, while the number of polytechnic students spending more than three months abroad as part of an exchange programme is as large as that of the universities. Only with respect to the number of incoming exchange

Box 12.3. **Staff exchanges in Finnish higher education**

Polytechnics

Number of staff spending less than one month abroad: 1 904.

Number of staff spending more than one month abroad: 103.

Number of foreign staff visiting Finnish polytechnics for less than a month: 1 120.

Number of foreign staff visiting Finnish polytechnics for longer than a month: 98.

Universities

Number of staff spending less than one month abroad: 743.

Number of staff spending more than one month abroad: 726.

Number of foreign staff visiting Finnish universities for less than a month: 859.

Number of foreign staff visiting Finnish universities for longer than a month: 1 154.

students are the universities more successful than the polytechnics. This is probably a matter of time. The Finnish polytechnics have done an impressive job in setting up exchange programmes with foreign institutions. Until now their own students have used these programmes more than foreign students. However, given amongst other things the high reputation of Finnish higher education, the growing number of English language programmes, and the facilities at most institutions, it can be expected that the number of foreign students will grow rapidly in coming years.

Indeed, it is possible that some of this growth has already happened. One confusing aspect of the data on internationalisation is that data received by the OECD team from the institutions indicate much higher figures for exchange students than the official AMKOTA data. It was not clear to us what the underlying reasons are for the differences. They may include the time of reporting, the way in which institutions report, or differences in the definition of an exchange student. If the institutional data can be relied upon, the polytechnics have a higher number of incoming and outgoing students in exchange programmes than the universities.

12.4.8. *Promoting internationalisation*

According to the background report, Finnish higher education is attractive to foreign students, because, amongst other things, of its large number of

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English degree programmes, the reputation of Finnish higher education institutions, the opportunities for studying subjects not available in the home country, and attractive high-quality programmes in technology and industrial design. These arguments were confirmed by the foreign students we interviewed.

Foreign students who are either studying in Finland to get a degree or in the framework of an exchange programme are so positive about Finnish higher education and studying in Finland that we recommend that the Finnish government use these experiences in an international promotion campaign to attract more foreign students, especially from outside the EU.

12.4.9. *Finnish higher education as an export industry*

An example of the lack of institutional operationalisation of Finland's international competitiveness policies that we noted above, is that the OECD team did not find any example of an intention to offer polytechnic programmes abroad, through setting up a campus in one or more foreign countries. Some of the institutions visited had not considered the possibility, while others had deliberately decided not to offer their programmes abroad. The main reasons mentioned for this latter decision were lack of staff capacity and resources, as well as the nature of the mission of the institution. As far as we can tell, none of the polytechnics had developed distance learning programmes aimed primarily at non-Finnish students.

12.4.10. *A potential obstacle to internationalisation: policy on tuition fees*

Discussion of a policy of internationalisation cannot avoid the question of who pays. At present, government policy is that higher education shall remain fee-free. This point was re-iterated by the Minister in a meeting with the team; it is justified in part on equity grounds and a firm commitment to minimise the impact of financial considerations on participation in tertiary education. However, this policy on fees has consequences for the separate policy of internationalisation. It means that Finnish taxpayers subsidise the education of non-EU students studying in Finland. Insofar as there are more Finnish students studying outside Finland than non-Finnish students studying in Finland, this may be sustainable, at least from a Finnish perspective. However, the more successful the strategy of attracting foreign students the greater the financial burden. Should the Finnish taxpayer pay for foreign (non-EU) students, or should these students pay at least part of the costs of their Finnish education through a tuition fee? Interestingly, the non-EU students that the team interviewed indicated that they would have been more than willing to pay a tuition fee. Current policy also does not take account of the (in)capacity of Finnish AMKs to afford to provide education services outside Finland. If lack of resources for internationalisation is an issue for institutions, the question of new sources of funds becomes pertinent.

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The implication of all this is that future policy on fees cannot be decided only on the basis of preferences for state *versus* individual responsibility for education in Finland, but also on the basis of Finland's goals for internationalisation. In other words, the ambitions for internationalisation might not be sustainable, given current policy on fees.

It is important to reflect upon the reasons for not charging tuition fees for foreign students at the moment. We understood that the reasons are based more on principle than on other arguments. If that is the case, we would recommend consideration of the introduction of tuition fees for foreign (non-EU) students. The issue has become the more pressing given the recommendations (published after we left Finland) of a committee that the number of foreign students in Finland should more than double. We think it likely that this will raise the general question of private contributions to higher education in Finland, and we discuss this wider issue again in Chapter 13.

12.4.11. *The Bologna Declaration*

An important driving force behind the development of the internationalisation policy for Finnish higher education is the Bologna Declaration signed by Finland and 29 other European countries. This is a voluntary agreement between the countries involved, aiming at an open European higher education landscape. In this open landscape, academic degree structure, quality assessment, and credit transfer should be harmonised as much as possible, in order to remove barriers to student mobility, and to make international comparability and recognition of degrees easier.

The way in which the Bologna Declaration is interpreted and internally translated differs from country to country. Finland has been one of the more active countries in implementing the Bologna agreements in its higher education system. It was clear to the OECD team that the Bologna Declaration "lives" in Finland. In many interviews it was referred to as a reason for innovation in higher education. We sometimes had the feeling that the Finnish higher education community takes the Bologna Declaration too literally and assumes that only one interpretation is possible. While we acknowledge the importance of the declaration and support the Bologna-related innovations in Finnish higher education, we also point out that the Bologna Declaration is not a law. It leaves room for interpretation and room to manoeuvre for each country.

12.4.12. *Bologna and degree structure*

The Finnish emphasis in the Bologna-related innovations is on degree structure. In the mid 1990s a Bachelor's degree was introduced in the Finnish university sector. This was heavily debated, since it was assumed that it would compete with the polytechnic Bachelor's degree. In practice, the competition

is less serious than expected. Most university students are accepted directly into a Master's degree programme. As a consequence the university Bachelor's degree programme has led a "sleeping life", and most polytechnic graduates have no difficulty finding a job.

However, prompted by the Bologna agreements, the Finnish Ministry of Education has decided to wake up the sleeping university Bachelor's degree. The underlying rationale is to implement the "two-cycle" structure agreed upon in the Bologna Declaration. This structure implies that the universities, as well as the polytechnics, will have two cycles consisting of a three-year Bachelor's programme and a two-year Master's programme. It is important to note here that the degree structure innovations in the Bologna countries are not identical. We recommend that Finland emphasise its own needs and specific circumstances in adapting its higher education degree structures, while maintaining competitiveness and international comparability. For example, it seems appropriate to first find an acceptable solution to the problem of the (nature of) the polytechnic postgraduate degrees before introducing an overall two-cycle degree structure in both sectors (see also Chapter 13). European experience suggests that a binary higher education system with an identical degree structure can only be successfully maintained if the two sectors are mature and have their own value and belief systems. As we noted in Chapter 10, there is the danger that an equal (but different) status and degree structure will lead to the dominance of the value system of the established (university) sector, resulting in a blurring of the boundaries between the two sectors.

12.4.13. *Summary and recommendations*

- The official data show that progress has been made in internationalisation. The number of regular foreign students enrolled in Finnish higher education is growing, but it is still low. Investigation should be undertaken as to the reasons why polytechnics generally have fewer regular foreign degree students than the universities and a support programme for polytechnics set up to increase the number.
- The number of Finnish students going abroad for longer than three months as part of an exchange programme is more or less the same for polytechnics and universities. However, the number of foreign students on exchanges in Finland is significantly higher for the universities than for the polytechnics. Nonetheless, given that they are a relatively new sector, the polytechnics have been remarkably successful in establishing themselves internationally.
- The need to enhance the competitiveness of Finnish higher education has not yet been fully "picked up" by institutional actors. The Government should consider in which ways institutions can be stimulated to offer degree programmes abroad, either individually or collectively.

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- The Government and institutions should reconsider the overall goal of one in three Finnish students taking part of their degree study abroad. A quantitative goal makes more sense if the advantages and expectations for students in a specific field of study are made clear. On the basis of these arguments, the target percentage of students to study abroad can be decided for each field. If the argument is that a foreign experience is in general advisable for every student, the target should be as many as possible.
- The Government should stimulate, *e.g.* through earmarked funding or other incentives, the overall development of English programmes in the polytechnics and universities. Institutions should be encouraged to co-operate in offering English programmes.
- The Government could consider launching an international publicity campaign about Finnish higher education on the basis, amongst other things, of the experiences of foreign students in Finland.
- The Government should consider introducing tuition fees for foreign non-EU degree students enrolled in Finnish universities and polytechnics.
- In the introduction of the two-cycle structure for both universities and polytechnics careful attention should be given to the problems and tensions in the relations between the two sectors. The advantages of increasing the international competitiveness and comparability of Finnish higher education by introducing a two-cycle structure have to be related to the disadvantage of creating unwanted intra-Finnish competition between the sectors.

12.5. Staffing

One of the crucial factors determining how the AMK sector will perform according to policy aims is how the institutions are staffed. When the new AMKs were established, the majority of their staff came from the former upper secondary vocational schools. This presented some obvious challenges. The continuation of staff members meant that the new institutions could start their operation much more smoothly than if they had to recruit new staff. A certain continuity from the former institutions was secured, and the staff also brought some of the traditions which distinguish the AMKs from the universities. However, the establishment of the AMK sector involved more than simply renaming the former institutions; the AMKs were to be structurally and educationally different from their institutions of origin. A high degree of staff continuation could be an obstacle to such an innovation process.

In 2000, the AMKs had 5 300 full-time teachers: 900 senior lecturers, 3 000 lecturers and 1 350 non-tenured teachers. The majority of these staff had been in the predecessor institutions. In addition, there were nearly

1 900 part-time non-tenured teachers, equal to 130 work-years of teaching capacity. The part-time teachers represent an important link with industry and business.

12.5.1. *Restructuring and staff qualifications*

Senior lecturers are required by the Decree on Polytechnic Studies to have a Licentiate or a doctoral degree, the lecturers a Master's degree, though the Decree permits the appointment of lecturers (but not senior lecturers) without these qualifications if they are "very knowledgeable in the field concerned". Three years of work experience is required. For either level of post in the fields of crafts and design, theatre and dance, or music, a polytechnic can decide that, instead of these qualifications, the requirements can instead be the artistic merit required in order to perform the function successfully. The legal requirements for tenured staff also apply to non-tenured staff "if possible".

When the AMKs were established, a five-year transition period was allowed for those teachers who did not fulfil these requirements, and a training programme assisted by the Government was introduced. At the same time, all staff had to undergo pedagogical training. During this period, the staff could hold their posts, and had time to acquire the qualifications required. This is considered both a good opportunity for the staff to upgrade themselves, and a tough incentive to succeed. At present, about 100 AMK teachers are working to obtain an appropriate degree. The background report records that the qualification profile of the AMK teachers is slowly approaching the goals, with 46% of the senior lecturers having a doctorate or a licentiate, and 86% of lecturers and 66% of the non-tenured teachers with a Master's degree. As the latest AMKs were established only in 2000, the transition period will continue for some years, and these figures will probably rise. Of all tenured teaching staff, 10% had a doctorate or licentiate. (For comparison, in the Norwegian State Colleges in 1997, a sector in existence since early 1970s, the percentage of tenured staff with a doctoral degree was also 10%. In the UK polytechnics, by 1992 it was 32% – and only 69% in universities.)

From our discussions within institutions, no severe problems with this staff development programme were reported, but the teachers' union had some concern about the time available for study in the transition period where a heavy burden is put on the teachers. For those aiming at a doctoral degree in particular, five years is a relatively short time when combined with a normal teaching load and the demands of the transition period. The review team tried to investigate whether any teachers have been dismissed or left voluntarily because they did not succeed in acquiring the required qualifications, but no systematic information seems to be available. We recommend evaluating the effects of the qualification transition period, including the extent to which it has led to a loss of key staff members.

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Another reason for departure of, especially, senior lecturers could be large expectations and accompanying pressures on this category of staff. We were confronted at several institutions with complaints of senior lecturers that they are expected to manage existing and develop new teaching programmes, initiate or manage R&D activities, be involved in institutional governance and build up external networks. For many of them this implied that they have to work far more hours per week than is indicated in their contracts.

The development of staff qualifications is important for the development of the AMKs as a distinctively new type of institution, and for gradually increasing their R&D function. The question arises whether the increased level of formal qualifications actually assists with this policy, or whether it might, instead, undermine the aim of keeping the AMKs separate from the universities by transforming them into copies of the universities.

As the formal academic qualifications of the staff increase, there is a risk that the academic values of the universities could displace the practical and professional focus of the AMKs. The academic requirements are understandable, but we would ask if in many cases, a university Master's or doctoral degree is the most appropriate qualification for staff in professionally oriented higher education. Will tenured teachers responsible for the practical training disappear from the AMKs, making them more dependent on part-time teachers? We would recommend that the power to appoint "knowledgeable" staff without formal qualifications should be fully exercised in appropriate cases. The aim must be to get the best staff for the job. The extension of formal academic requirements to non-tenured and part-time staff seems even less plausible. We recommend that the wording of these requirements in the Decree be reconsidered to reflect more clearly the value attached to professional ability in staff appointments.

The emphasis on formal academic qualifications for staff heightens our view that there is a general need for the development of methods to accredit prior experience and learning, in this case of the prior learning and professional knowledge of staff (paralleling our proposals in Chapter 10 for the development of APEL for students), to ensure that practical experience is given appropriate recognition in staff recruitment. We further recommend that steps be taken to provide opportunities for full-time teachers to gain update work experience by periods of return to the appropriate industries, services or businesses. This point is heightened by the extent to which part-time non-tenured teachers appear to be the main source links with working life. The use of such teachers, with current direct experience of working life, is of course welcome. However, there appears to be a heavy reliance on these teachers as the primary link; greater recognition of professional experience and increased opportunities for professional updating of full-time staff will widen the base for these links.

The formal academic requirements also present the hazard that AMK teachers will now have qualifications making them eligible for appointment as university professors, raising the risk that the AMKs increasingly will be a stepping stone to a university position. Our impression is that, at present, teaching at the AMKs is relatively attractive, and salaries are at least competitive with those of the universities. But if the academic element of the qualification profile of staff becomes more visible, the danger of AMK staff haemorrhage to the universities may increase.

This problem – of one set of academic values dominating the two sectors of higher education – is heightened by the requirement that you cannot become a teacher at an AMK without a university degree. It is paradoxical that an AMK degree does not qualify the graduate to teach in an AMK. At this point the AMKs cannot staff themselves, but have to depend on the output from universities to recruit teaching staff. In this context, the potential development of postgraduate programmes at the AMKs has a special significance. Were Master's level programmes to be developed in AMKs, they would offer a route for AMK graduates to become AMK teachers. A further benefit of the development of such programmes would be in retaining staff in AMKs. By offering the higher level work attractive to many staff, the programmes could help to retain staff who can at present only find it in the universities.

12.5.2. *Summary and recommendations*

- Reasonable progress has been made in upgrading the academic qualifications of AMK staff. We recommend evaluating the effects of the qualification transition period, including whether it has led to a loss of key staff members.
- The emphasis on formal academic qualifications presents the risk that the academic values of the universities could displace the practical and professional focus of the AMKs. We would recommend that the power to appoint "knowledgeable" staff without formal qualifications should be fully exercised in appropriate cases.
- We recommend that the wording of the qualification requirements in the Decree on Polytechnic Studies be reconsidered to reflect the value attached to professional ability in staff appointments.
- We recommend the development of methods to accredit the prior learning and professional knowledge of staff.
- Opportunities should be provided for full-time teachers to gain update work experience by periods of return to the appropriate industries, services or businesses.
- Although, at present, teaching at the AMKs is relatively attractive, and salaries are at least competitive with those of the universities, there is a

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danger that AMK teachers acquiring university qualifications will see an AMK teaching post as a stepping stone to a university position.

- It is paradoxical that an AMK degree does not qualify the graduate to teach in an AMK.
- If Master's level programmes were to be developed in AMKs, they would offer a route for AMK graduates to become AMK teachers. A further benefit of the development of such programmes would be in retaining staff in AMKs, by offering the chance to engage in higher level work.

12.6. Legislation and other instruments of policy

To ensure that future development of higher education in Finland sustains diversity and, in particular that education in the polytechnics maintains its distinctive nature, will require the use of a wide range of policy instruments and, as we noted in this chapter, will involve a wide range of actors. Legislation is one such instrument – though not the only one – and is a pre-requisite in the Finnish tradition, since it offers the framework within which the polytechnics are expected to further develop. It also provides the framework within which other instruments have to be developed and used, and within which relationships with the universities are regulated.

We were pressed by numerous respondents for clearer definition of the "missions" of the two sectors. It is vital, as we also noted, that the distinction between the two sectors does not become blurred, and legislation is one way in which this can be secured. The new legislation on polytechnics should make clear the distinctive nature of the sector, and the law of universities may also need to be examined to ensure that it complements this.

However, it is important to avoid both facile distinctions and excessive detail. The Act on Polytechnic Studies reflects an emerging pattern in Finnish legislation to offer a framework within which policy can develop, rather than a detailed prescription. We welcome this, for this reason and because, as we concluded in Chapter 10, the polytechnic policy has been broadly successful, we do not see the need for fundamental changes to the current Act or Decree on Polytechnic Studies. It is important that new legislation makes clear that the polytechnics are part of the higher education system, and that it delineates the broad characteristics of polytechnic education.

The present Act on Polytechnic Studies offers a useful general statement of the nature of polytechnic degrees without excessive definition, and it could even be a little less specific without damage to its intent. It may be appropriate to affirm that such degrees would be recognised as first-cycle awards under the terms of the Bologna Declaration. It is not for us to prescribe the wording of legislation. But, given the concerns expressed in Finland about the development of AMK postgraduate programmes and the view that doctoral

programmes should be restricted to universities, the Government may wish to consider reinforcing future Decrees on Polytechnic Studies, for example, by confirming the requirement for three years of practical experience before entry to an AMK postgraduate programme, or by clarifying in university decrees the distinctive characteristics of university Bachelor's, Master's and doctoral degrees.

Some further, particular issues may need to be addressed in the new legislation, which we have outlined in the sections above, covering aspects of governance, staffing, staff and student representation, etc.

The successful development of policy beyond legislation will involve the use of more subtle and indirect instruments. Most advanced economies and policies now accept the importance of granting maximum autonomy to educational institutions, consistent with the legitimate needs of accountability. In this context, mechanisms of regulation, funding, consultation, negotiation and agreement will all be important in the future development of the polytechnics and higher education policy in general in Finland. Relaxation of detailed control of numbers and re-establishment of regular funding to support capital investment are priorities. We discussed above ways in which the mission of polytechnics can be discussed as part of the funding mechanism. Negotiation, agreement and regulations on staffing are another such example (see above).

The role of FINHEEC will be central to the successful development of polytechnic education. Its evaluations have identified strengths and weaknesses in the sector, and its use of thematic evaluations of provision in subject areas across the two sectors has provided insights that can be built on to maintain high quality but diverse provision in the different institutions. FINHEEC evaluations have noted how the traditions in the health and social sciences differ from those for, say, technology. In future, FINHEEC's encouragement of institutional self-assessment will be an important policy tool to promote quality in different areas of provision without the need for regulation.

A particular issue on which more subtle policy instruments are needed is the considerable lack of understanding, that we saw in some quarters, of the nature and quality of the work in the polytechnics, and of frank prejudice in some cases. One university respondent told us that he felt that closer co-operation with the neighbouring polytechnic was "not allowed". There should be no place for such attitudes in an academic institution. Mechanisms which promote joint involvement, mutual respect and equal standing of staff in the two sectors should be encouraged. FINHEEC is one body which already offers such joint involvement. Reciprocal membership of polytechnic and university committees, boards and working parties may also offer a way forward. Formal agreements between proximate polytechnics and universities on the

programmes and subjects areas in which they will each work [on the lines of that in Auckland, New Zealand (Brook, 2000) between two adjacent institutions, and of some already existing in Finland] may be a way of reducing concerns over academic territory. The existence of co-operation and such agreements could be a matter for discussion in the negotiations about funding with institutions in both sectors.

We also found evidence that there are some problems within the machinery of the Government itself. There appear to be some conflicts or confusion between aspects of education policy and some policies of other ministries. We noted above the range of ministries that polytechnics have to deal with. There is even some overlap within the Ministry of Education's own field in the relationship between mainstream polytechnic education and adult education. The potential impact on the development of the polytechnics of other policies in education and from other domains of government will need to be considered. Finally, ministerial responsibilities for development, funding and consultation at provincial and regional level are complex, confusing and time-consuming, and did not always seem entirely rational to us as outside observers.

12.6.1. Summary and recommendations

- To ensure that future development of higher education in Finland sustains diversity and, in particular the distinctive nature of education in the polytechnics, will require the use of a wide range of instruments of policy. In the Finnish context legislation can be expected to offer the framework within which these instruments must be developed and used.
- We do not see a need for fundamental changes to the current Act and Decree on Polytechnic Studies. The legislation should offer a permissive framework, making clear that the polytechnics are part of the higher education system, and delineating the broad characteristics of polytechnic education. It may be appropriate to affirm that polytechnic degrees would be recognised as first-cycle awards under the terms of the Bologna Declaration.
- The Government will need to attend to the problems arising from the considerable lack of understanding that we saw in some quarters, of the nature and quality of the work in the polytechnics. Mechanisms (such as involvement in FINHEEC and agreements between institutions) which promote joint involvement, mutual respect and equal standing of staff in the two sectors should be encouraged.
- There appear to be some conflicts or confusion between aspects of education policy and some policies of other ministries.

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PART II

Chapter 13

Contingencies, Risks and Threats

Abstract. *Chapter 13 identifies a number of external pressures and challenges that the Ammattikorkeakouluts (AMKs) must meet. The include the challenge to permit maximum student mobility in the higher education system, the level and nature of qualifications that the AMKs might award, the role of AMKs in facilitating lifelong learning, the interface between AMKs and upper secondary vocational education, how to achieve financial sustainability, and how to monitor performance.*

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The elements of policy which we have addressed in the preceding chapters are those over which the Ministry can, in general – and subject to the normal processes of a democratic state – determine how it wishes to act. A number of other factors, over which it has less direct control, will affect the outcome of future policy and raise questions about the nature of the longer-term development of the sector. Amongst these are the issues currently faced by the rest of the education system, particularly the sectors articulating directly with the AMKs – adult education, upper secondary vocational education and the universities.

13.1. Individual mobility in higher education

The principle of maximum individual mobility within a structured system that we set out in Chapter 11 raises questions of transfer between sectors of the higher education system. In the context of ideas of lifelong learning (see below) and the Bologna Declaration (1999) these are now fundamental questions for Finnish higher education.

Whilst the maintenance of distinctive sectors is important for student choice and diversity of provision, this does not mean that co-operation between the sectors should be avoided. Indeed, individual mobility and institutional responsiveness to local, regional and national needs depend on it. There are examples of fruitful co-operation. In Helsinki, to mention one, there is a consultative committee of the university and 12 polytechnics to help define the contribution of these institutions for regional development in this metropolitan area.

However, we have already noted a lack of co-operation and understanding between the sectors. Particularly worrying is the considerable variation in practice of universities' acceptance of AMK credits when students seek to enter a university Master's programme with an AMK degree. It is left to the individual university to decide the number of credits which are recognised. The Government has no legal right to dictate detailed conditions to the universities, though it has recommended that when a graduate transfers from one sector of higher education to another, about half of the studies in the same field should count towards the second degree. This suggests that a polytechnic graduate would normally be given recognition for some 70 or 80 credits. It seems improbable that apparently similar AMK degrees could be worth only 30 or 35 credits in some cases and 100 in another and it raises

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questions of how well founded are the differences in practice between subject areas and universities. The decisions appear to be arbitrary, or a matter of luck or chance, rather than based on systematic assessment of what has been learned. Even leaving aside questions of the justice and robustness of such disparities, one effect of the low credit rating is to lengthen the study period for students who do transfer to the university sector, in contradiction to the Government's policy. Though it may help sustain university enrolments, it has negative resource implications for individuals as well as the public purse.

As pointed at by the previous OECD review of Finnish higher education (OECD, 1995), there are certain dilemmas concerning the policy of credit transfer. A very rigid system is inefficient. In line with our principle of maximum individual mobility, a higher education system should avoid dead-ends, and students should be able to move relatively easily between sectors; a combination of both academic and applied programmes could be positive for the labour market. However, very flexible credit transfer and one-to-one recognition may threaten the diversity of the system. A development towards AMKs being primarily a kind of first tier undergraduate institution should be avoided. It could turn the Finnish system away from the present "vocational" model towards the "stage" model (OECD, 1995, pp. 193-194). Whilst we are aware of this dilemma, the review team advocates a policy of more flexible transfer.

Transfer between institutions and sectors is an issue on which considerable care needs to be taken, but it is also one in which the Ministry has some responsibility. It should be regarded as part of national policy. We do not believe that the Ministry can stand aside when degrees awarded in AMKs which it itself regulates are devalued by other, state-owned institutions. It cannot be a matter for universities alone to decide on the value of AMK degrees. That said, it is equally unacceptable for any ministry to instruct autonomous universities about the selection of students. The review team does not question the value of a strong degree of university autonomy, but in this respect there is a clear contradiction between the principle of autonomy and national policy for higher education.

From the evidence we have received it is clear that part, at least, of the problem arises from a lack of knowledge in universities of the nature and standards of AMK education. As we noted in Chapter 12, the Ministry should pay urgent attention to developing ways of promoting greater co-operation and understanding between staff in the sectors. In some countries, such as the UK, the system of "external examiners" has been a fruitful mechanism for developing inter-sectoral links, with staff of universities and polytechnics having a position on each other's examination boards. This relies, however on parity of awards, and may not be possible to consider in Finland until the re-wakening of university "first cycle" degrees, and/or until the AMKs offer

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Master's level qualifications. In the meantime, as we noted in Chapter 12, developing the extent of work of FINHEEC may have a role to play in this.

13.2. Postgraduate qualifications in AMKs

The policy to permit the polytechnics to put forward proposals, on an experimental basis, to offer postgraduate, post-experience, programmes has been controversial especially concerning the formal qualification these programmes should offer. There are strong, and strongly put, arguments on both sides. They can be summarised as follows.

The proponents of the proposal point to the importance of such programmes for students; without them, there is no route in AMKs for graduates with AMK degrees. Further academic qualifications can only be gained by study in universities, and this appears to contradict the idea underlying the AMK policy about the nature and value of higher education directed to working life and employment. There is no dispute, however, about the value of a route to further qualifications for people with experience in working life. Indeed, the universities already offer some programmes of this sort, and the polytechnics would seem to be the obvious location for their development. In many countries programmes of this sort are the major growth sector in higher education.

However, there is some evidence that the proposal results predominantly from pressure from institutions themselves and their staff to increase the prestige of the institutions and make recruitment and retention of staff easier. Is the proposal primarily a response to the restrictive policy of credit recognition by the universities, and hence a student-driven development?

There are also arguments for such programmes based on the needs of the labour market. We were offered contradictory evidence about labour market demand, though there is strong support from some professions and some regions. The Government's commitment to a "knowledge economy" and to lifelong learning, are compelling arguments for their development. The need for opportunities for continuing professional development is widely recognised in advanced societies. The report of the Committee on Regional Development of Higher Education strongly supports the development of polytechnic postgraduate degrees as part of the regional higher education system's response to the needs of working life.

There are other, less obvious benefits of such programmes, for the development of staff of AMKs. As we have noted in Chapter 12, graduates from AMKs can become members of staff at an AMK only by acquiring further qualifications (Master's, Licentiate or Doctorate) at a university. Were Master's level programmes to be developed in AMKs, they would offer an alternative route for AMK as well as university graduates to enter the teaching profession.

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A further benefit, so the argument goes, would be in retaining staff in AMKs. By offering higher level study, the new programmes would help to retain staff who can at present only seek career advancement in the universities.

Such programmes, by bringing experienced practitioners into the AMKs as students, would also enhance the interaction between the education system and working life. They would increase the opportunity for the involvement of the polytechnics in employment related R&D projects and could help develop centres of expertise in specific programme areas.

Arguments against the development of such programmes include the danger of duplication of university provision and "academic drift". It is not clear, for example, what is the rationale for developing postgraduate, post-experience programmes in business in AMKs when the MBA already exists in universities – though one conclusion of this line of argument might be that it is the AMK rather than the university sector which should offer them. It is, however, clear that there are many subject areas where there is no comparable provision in the universities, and thus where this argument has less force, and where such proposals should be welcomed.

We heard of considerable worries – particularly from the universities – of the danger of blurring the boundaries between the sectors. There was uncertainty about whether the programmes would lead to the award of a "Master's" degree, reflecting the desire to avoid overlap with existing university degree titles and thus further controversy. It will be important to clarify this. We see no merit in inventing an entirely new category of degree. In our view, there is no reason why the polytechnic postgraduate programmes should not have the title of Master's degree. One way of clarifying the difference of function between the postgraduate programmes in the two sectors would be by using the title of Professional Master's (MProf) for those in the polytechnics – reflecting their post-experience character and professional orientation.

It should be noted that "academic drift" refers less to concern about *levels* of study than about the *nature* of programmes. The development of postgraduate courses in non-university institutions is not in itself an indication of academic drift; the issue is whether they demonstrate different characteristics or simply imitate university courses. One issue, which is faced also by the similar post-experience programmes in the universities, is that some of the programmes may be more in the nature of "conversion courses", in that they offer the opportunity for qualification in a different field from the graduate's first degree. Due care would be needed to determine if the new programmes (and existing university programmes) are properly comparable with Master's standards.

The present climate of controversy in Finland points to a need for the Government to make clear that the current experimental period is exactly that, and that it will undertake a robust evaluation of the experiment in due course. It should be clear that, although the political decision has been taken to offer 300 places on such programmes, if the proposals which, at the time of writing, have been submitted from polytechnics are not of adequate standard, they will not be approved and fewer places may be funded. The Ministry should make clear, in advance, the criteria against which the experiment will be evaluated. These will need to take into account the response from the universities as well as the outcome of the experimental programmes in the polytechnics themselves.

13.3. Lifelong learning

As the OECD Ministers of Education noted in 1996 "Lifelong learning will be essential for everyone as we move into the 21st century and has to be made accessible to all" (OECD, 2001b, p. 7). Yet, as the Secretary General of OECD has noted, this ambition is far from easy to achieve; it implies "above all a *systemic* view, building strong linkages between learning at different stages of life and in a wide range of settings and partnerships" (*ibid.*). In Finland, the rapid increase in educational attainment in the younger generation has led to a considerable competence-gap between generations. Moreover, the future requirements of the labour market cannot be met by educating the younger generation alone: both as an input to the development of the economy, and to prevent employability problems for the older generations, lifelong learning should be a high priority.

Finland is recognising the importance of lifelong learning in ensuring an adequate labour supply and an educated citizenry (Ministry of Education, 2000b, p. 17). Its development plan refers to the aim of developing learning skills in all sectors of education and diversifying liberal and adult education, and to the need to recognise prior study achievements. There are references in its higher education policy to liberal education and professional upgrading, development of competence based qualifications and targeting adult and third age students (Ministry of Education, 2000a, p. 22). However, we heard less reference to the idea of lifelong learning in our discussions than we had expected. Many respondents in the AMKs tended to situate themselves in a traditional education system, rather than in lifelong learning.

If the concept of lifelong learning is taken seriously, it implies radical rethinking about the whole education system and this will have implications for higher education as much as any other sector. In particular, the traditional "front-ended" model of higher education, in which school leavers gain a qualification that equips them for the rest of their working lives, will no longer

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be valid. The question posed by Robinson (1968) when he set out a philosophy for the polytechnics in Britain – "what is a degree and what is it for?" – will become increasingly pertinent. Curriculum may change quickly. Qualifications may be acquired over extended periods, with students "dropping in" and "out" to suit other demands in their lives and work. Credit transfer and accumulation is likely to be common.

Higher education will have to accommodate a wide variety of people of different ages with different knowledge and experience, much of it uncertificated. In particular, as we have noted in Chapters 10 and 12 there is a need, already, for wider systems of accreditation of prior learning and experience (APEL) – for both students and staff in AMKs. It seems to us that the distinction between adult and higher education is likely to become increasingly blurred; many students in higher education are already over the age of 25 and, if lifelong learning becomes reality, the proportion will increase. The distinction between full-time and part-time education is also likely to become blurred.

In this context, the polytechnics are well placed to act as a key sector in the development of lifelong learning in Finland. The AMK sector is already designed to respond to changing external needs in its mainstream programmes and in its role in adult education and post-experience courses, and to a variety of types of student. It offers degree-oriented adult education, and is developing open polytechnic education.

But its future role will depend on the development of a range of system-wide features. Neither the open polytechnic nor the longer established open university offers the chance to complete a whole degree programme in themselves. It is not clear to us why adult programmes are treated as separate from the mainstream. Lifelong learning is an area where co-operation between institutions and sectors, locally, regionally and nationally is vital. Provision of distance learning programmes is one example where polytechnics and universities could co-operate in support of the Ministry policy (Ministry of Education, 1999).

Further attention may be needed to whether the polytechnics have resources for and commitment to course delivery in the evenings, and for distance education. Have AMKs seen the full potential for income-generating continuing education courses? We have noted the need for wider recognition of different forms of prior learning and experience (APEL), and for an agreed system (unlike the present *ad hoc* and inequitable arrangements) for credit transfer and accumulation.

13.4. Upper secondary vocational education

It is clear from the evidence we have considered that there is considerable concern about upper secondary vocational education in Finland. The AMK reform was often referred to as weakening other forms of vocational education. At one level this is rather obvious, since many former postsecondary vocational institutions have been upgraded, and the remaining 20% of provision has become part of upper secondary vocational education. However, the number of students in upper secondary vocational education has grown by about 20% since 1995, and vocational education and training have undergone intense development. For example, all the qualifications have been transformed to three-year courses.

We have been told, nevertheless, of concern about the apparent unpopularity of upper secondary vocational education with students, and the shortage of graduates from this sector entering the labour market; we have noted, too, concerns about its suitability as a preparation for study in higher education. It is beyond the mandate of the review to assess this topic, but we note that many of the concerns are shared by the Government, and we record our support for a review of the development of the sector. The policy issues include: What are the long-term needs of the labour market? Should apprenticeship training (which seems to play a relatively minor role in Finland) be developed? How to combine the role of vocational upper secondary education in both preparing for work and for access to higher education?

13.5. Financial sustainability

We have previously noted the ambitious targets for provision of higher education for a substantial majority of the age group in Finland. Currently, all higher education is fee-free in Finland, reflecting a long-standing tradition, broad acceptance of its value as a public good, and the general consensus on the provision of public and social services through taxation. There are a number of reasons why Finland may have to consider increasing the level of the private funding contributions to higher education, including, perhaps, contributions from students to the costs of their education.

First, it is one of the few countries sustaining such a high level of provision in this way and it may need, at some point, to considering relieving the burden on taxation. There is a question whether the Finnish Government is able to allocate the necessary resources to a sector which has grown very strongly. There are some signs that higher education in Finland is under-funded. For example, there were in 2000 on average 21.7 students to every full-time teacher. This is relatively high, and could be a problem for development of the teaching quality of the AMKs. Although higher education has high

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priority in Finland, this sector has to compete with all other sectors for scarce public resources. The dramatic cutback of public spending during the economic recession has created resource needs in most sectors funded from the state budget.

Second, whilst it is a public good, higher education is also a positional good, offering private benefits. The background report (see Table 1.7) demonstrates how, in Finland, the salaries of those with higher education currently exceed those of others. A substantial literature shows that, overall, graduates earn more over their lifetimes than those with lower qualifications – to say nothing of other psychic, social and cultural benefits. There are few other positional goods wholly funded by taxation in the way that higher education is. The effect is counter to the concerns for equity in the Finnish tradition, because those who earn less help to pay for the education of those who will earn more.

Third, as we note in Chapter 12, the present arrangements mean that Finland is subsidising the higher education of students from other countries. While EU students have to be treated the same way as Finnish students, students from outside the EU who receive a fee-free education also benefit from Finnish subsidies. The Finnish Government's ambitious targets for increasing the number of foreign students heighten the issue. It would not be unreasonable – and may be necessary to sustain the acceptability of the policy of internationalisation of higher education – for foreign students to make an appropriate contribution for the higher education they receive in Finland.

Fourth, as we have also suggested in Chapter 12, Finland may wish to consider offering its higher education services in locations outside the country. A basis for charging for such services may become necessary.

We are conscious that this is a particularly sensitive topic in Finland, but we believe it must be addressed sooner rather than later. Because the topic appears to be "taboo", the debate, insofar as it takes place, has been largely sterile. At a political level, debate has focused on the question of whether or not (and, invariably, not) to impose tuition fees, rather than a discussion of priorities for allocating public resources, and what are the consequences of *not* imposing tuition fees as well as of imposing them. We are aware that the present Government is not prepared to reconsider its opposition to tuition fees. We are aware that the students' unions are opposed to the introduction of fees. The reaction to the idea of tuition fees is understandable, though sometimes it seems more ritualised than realistic. This debate has left a vacuum, filled by technical discussion of private and social rates of return to investment in higher education, rather than discussion of the allocation of national resources. Discussion of tuition fees displaces debate from other central issues, particularly the *indirect* costs of providing fee-free higher

education, for example the cost of extended duration of study. The debate needs to take place on a much more transparent basis, with a clear indication of all the costs and choices involved.

Moreover, although much of the debate in Finland has been in terms of tuition fees, this is not the only way that private contributions to higher education could be made. There are a number of approaches to the issue of private funding of higher education and we have worded our suggestions above carefully. A number of our respondents acknowledged the validity of some of the arguments above, and students that we met were not implacably opposed. They noted, for example, that, if students were required to make a contribution to the costs of their higher education, it might enhance their motivation to complete their studies, as well as prompting them to give proper thought to their decision to embark on higher education in the first place.

In the Finnish context, it might be more appropriate to consider forms of private contribution to higher education other than fees, particularly an income-contingent contributions scheme, or some form of graduate tax. These approaches have the advantage of avoiding an "up-front" cost to the student but generate income for the system in the longer term. No scheme is perfect and such "post-hoc" schemes present familiar problems of double taxation of graduates, default, etc; just as tuition fees present problems of disincentive to poorer students and those without a family tradition of higher education. All schemes raise the question whether the money raised is retained solely in higher education.

What is important, in our view, is that the issue is debated. We do not advocate a particular outcome, but we do urge that the issue be addressed, sooner rather than later, for "post-hoc" schemes in particular, take some time to generate income. The longer the delay, the more likely the less desirable fee system is to be adopted – on the grounds of its immediate financial benefits.

13.6. Continued monitoring of the system

Finland has a relatively well-developed base for monitoring, and the development of databases has been seen as very important in the development of the polytechnic system. In addition to the data collected by Statistics Finland, the KOTA and AMKOTA databases are very valuable tools, and the Finnish Higher Education Evaluation Council also has the potential to play an important role. We have noted, however, a number of omissions in the data available and these are significant in that they relate to key aspects of the polytechnic policy. An important principle of data collection for monitoring and evaluation is that data are answers to questions. The data required can be determined by asking of any policy: if policy is working what would you expect to see happening? The absences we have noted in relation to the polytechnic

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policy include: data on the transition from higher education to work; staff development, retention and recruitment; student transfer between AMKs and universities; the regional impact of polytechnics and links with working life; some aspects of internationalisation; and international comparisons of policy challenges and the solutions to them.

13.7. Summary and recommendations

- A number of factors, over which the Government has less direct control, will affect the outcome of future policy, and raise questions about the nature of the longer-term development of the sector.
- The principle of maximum individual mobility within a structured system raises questions of transfer between sectors of the higher education system. In the context of the Bologna Declaration (1999) these are now fundamental questions for Finnish higher education.
- There is an unacceptable variation in practice of universities' acceptance of AMK credits when students seek to enter a university Master's programme with an AMK degree. Part, at least, of the problem arises from a lack of knowledge in universities of the nature and standards of AMK education. The Ministry should pay urgent attention to developing ways of promoting greater co-operation and understanding between staff in the sectors.
- The policy to permit the polytechnics to put forward proposals, on an experimental basis, to offer postgraduate, post-experience, programmes has been highly controversial. There are strong, and strongly put, arguments on both sides. There is no dispute, however, of the value of a route to further qualification for people with experience in working life, and the polytechnics would seem to be the obvious location for their development.
- One way of clarifying the difference of function between the postgraduate programmes in the two sectors would be by using the formal title of Professional Master's (perhaps MProf) for those in the polytechnics – reflecting their post-experience character and professional orientation.
- The Government should make clear that the current experimental period is exactly that, and that it will undertake a robust evaluation of the experiment in due course. If the proposals which have been submitted from polytechnics are not of adequate standard, they should not be approved, and fewer places may be funded. The Ministry should make clear, in advance, the criteria against which the experiment will be evaluated.
- The concept of lifelong learning implies radical rethinking about the whole education system and this will have implications for higher education; the traditional "front-ended" model of higher education may no longer be valid.

- The polytechnics are well placed to act as a key sector in the development of lifelong learning in Finland, but its future role will depend on the development of a range of system-wide features. There will be a need for wider recognition of different forms of prior learning and experience, and a system for credit transfer and accumulation. It is not clear to us why adult programmes are treated as separate from the mainstream.
- There is concern about upper secondary vocational education in Finland, including doubts about its suitability as a preparation for study in higher education. The concerns are shared by the Government, and we support consideration of its future development.
- Finland may have to consider, sooner rather than later, if forms of funding of higher education other than through taxation are necessary. It may be also appropriate for foreign students to make an appropriate contribution for the higher education they receive in Finland.
- The debate on this issue has so far been narrow and largely sterile; it needs to be pursued on a much more transparent basis, with a clear indication of all the costs and choices involved.
- In the Finnish context, it might be appropriate to consider other approaches than tuition fees to private contributions for higher education, particularly an income-contingent contributions scheme, or some form of graduate tax.
- We have noted a number of omissions in the data available for monitoring of the polytechnic policy. They include data on the transition from higher education to work, staff development, retention and recruitment, student transfer between AMKs and universities, and some aspects of internationalisation.

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Bibliography

BOLOGNA (1999),
The European Higher Education Area: Joint Declaration of the European Ministers of Education, Universita degli Studi di Bologna, 19 June, Bologna.

BROOK, D. (2000),
"Diversity in the University Sector ; Can An Alliance Protect It?", *Higher Education Review*, Vol. 33, No. 3, pp. 7-24.

Education and Training for Entrepreneurship (2000),
Report on seminar supported by ESR, September, Varkaus, Finland.

EMPLOYERS CONFEDERATION OF SERVICE INDUSTRIES (1999),
The People with Diverse Skills – One of the Strengths of Service Industries.

ERAUT, M. (1994),
Developing Professional Knowledge and Competence, Falmer, London.

FINLAND HIGHER EDUCATION EVALUATION COUNCIL (FINHEEC) (1999),
Audit of Quality Work: North Karelia and Mikkeli Polytechnics, Edita, Helsinki.

FONSELIUS, J., HAKALA, M.K. and HOLM, K. (2001),
Evaluation of Mechanical Engineering Education at Universities and Polytechnics, FINHEEC, Helsinki.

GIBBONS, M., LIMOGES, C., NOWTY, H., SCHWARTZMAN, S., SCOTT, P. and TROW, M. (1994),
The New Production of Knowledge: The Dynamics of Science and Research in Contemporary Societies, Sage, London.

GORNITZKA, Å. and MAASSEN, P. (2000),
"Hybrid Steering Approaches with respect to European Higher Education", *Higher Education Policy*, Vol. 13, No. 3, pp. 267-285.

HUTTULA, T. and HAMALAINEN, K. (2001),
"The Regional Role of Higher Education. Quality Awards to Finnish Polytechnics", paper produced for OECD review team (mimeo).

MINISTRY OF EDUCATION (1996),
Higher Education Policy in Finland, Helsinki.

MINISTRY OF EDUCATION (1999),
Education, Training and Research in an Information Society: a National Strategy for 2000-2004, Helsinki.

MINISTRY OF EDUCATION (2000a),
Higher Education Policy in Finland, Helsinki.

MINISTRY OF EDUCATION (2000b),
Education and Research 1999–2004: Development Plan, Helsinki.

MINISTRY OF EDUCATION (2001),
Management by Results in Higher Education, Helsinki.

MINISTRY OF LABOUR (1994),
Unemployment down to 200 000, Presidential Working Group on Employment, September 30, Helsinki.

OECD (1982),
Reviews of National Policies for Education – Finland, Paris.

OECD (1991),
Alternatives to Universities, Paris.

OECD (1995),
Reviews of National Policies for Education: Finland: Higher Education, Paris.

OECD (1997),
Economic Surveys: Finland, Paris.

OECD (1998),
Redefining Tertiary Education, Paris.

OECD (2000),
OECD *Information Technology Outlook: ICTs, E-Commerce and the Information Economy*, Paris.

OECD (2001a),
Economic Outlook, Paris.

OECD (2001b),
Education at a Glance: OECD Indicators, Paris.

OECD (2001c),
Education Policy Analysis ; Education and Skills, Paris.

OECD (2001d),
Labour Force Statistics 1980–2000, Paris.

OECD (2001e),
OECD *in Figures*, Paris.

OECD (2001f),
SOPEMI 2001: *Trends in International Migrations*, Paris.

OECD (2003),
Beyond Rhetoric: Adult Learning Policies and Practices, Paris.

OLSEN, J.P. (1988),
"Administrative Reform and Theories of Organization", in C. Campbell and B.G. Peters (eds.), *Organizing Governance ; Governing Organizations*, University of Pittsburgh Press, Pittsburgh, pp. 233-254.

PRATT, J. (1997),
The Polytechnic Experiment: 1965-1992, SRHE/OU Press, Buckingham.

PRATT, J. and BURGESS, T. (1974),
Polytechnics: a Report, Pitman, London.

RAIVOLA, R., KEKKONEN, K., TULKKI, P. and LYYTINNEN, A. (2001),
Producing Competences for Learning Economy, Sitra, Helsinki.

ROBINSON, E.E. (1968),
The New Polytechnics, Penguin, Harmondsworth.

SCHON, D. (1983),
The Reflective Practitioner: How Professionals Think in Action, Basic Books, New York.

SCHON, D. (1987),
Educating the Reflective Practitioner: Towards a New Design for Teaching and Learning in the Professions, Jossey-Bass, San Francisco.

SCOTT, P. (1995),
The Meanings of Mass Higher Education, Open University Press, Buckingham.

TIAINEN, P. (1999),
Employment and Welfare in Finland in the Years 1860–2030, Ministry of Labour, Helsinki.

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Reviews of National Policies for Education

Polytechnic Education in Finland

In the early 1990s, in the midst of a major economic slump, the Finnish government embarked on a strategy to re-mold Finland into a knowledge society. A key element in this strategy was to raise the knowledge and skill levels of the population by doubling higher education enrolments by the end of the century. Recognising that it would be neither affordable nor desirable to double traditional university enrolments, the government created a new sector of higher education with a different content, degree structure, and governance from universities – the "Ammattikorkeakoulut" (polytechnics).

This report prepared for the OECD by an independent group of experts suggests that the strategy is likely to pay off. The "AMK sector" is distinct, highly regarded, and currently enrols three-fifths of students entering higher education. The report raises issues of fees for higher education, examines strategies for internationalisation of higher education, addresses issues of governance and accountability in higher education and offers advice on how the new system could be strengthened further. Finland has a record of heeding the advice of past OECD education reviews. This review seems likely to continue that pattern, helping to shape the future growth of a dynamic new education sector.

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